U. S. CIRCUIT COURT. NORTHERN DISTRICT OF ILLINOIS. NORTHERN DIVISION. -----

American Graphophone Company) In Equity
versus) No. 23,986
Edward H. Amet) Term No.719

PARTIAL RECORD, 1896 -- 1897.

R.R Wile
1955-58 37 Ave.

Raymond R. Wile
1975.

U. S. Circuit Court. Northern District of Illinois.
Northern Division.

American Graphophone Co.	)	
	)	In Equity
versus	))	General No. 23,986
	)	Term No. 719.
Edward H. Amet	)	

PARTIAL RECORD, 1896 -- 1897.

Electrostatic copies of
originals at the following
locations:
Major portion -- F R C -Chicago
Tainter Testimony -- National
Museum of Hist. & Technology--
Tainter papers
Attempt to reopen in Leeds case
So. Dist of N.Y. -FRC Suitland
(All FRC material from Archives
section -- RG 21)

In the United States Circuit Court
FOR THE Northern DISTRICT OF Illinois.

AMERICAN GRAPHOPHONE COMPANY,
Complainant,

vs.

Edward H. Amet,

In Equity.

Bill of Complaint.

To the Honorable, the Judges of the Circuit Court of the United States for the District of Northern Illinois — *or Chancery sitting:*

The American Graphophone Company, a corporation duly organized and existing under the laws of the State of West Virginia, and having its principal office in Washington, in the District of Columbia, brings this, its bill of complaint, against Edward H. Amet, a resident of Waukegon, in the State of Illinois, and an inhabitant of said Northern District of Illinois

I.

And thereupon your orator complains and says that Chichester A. Bell and Sumner Tainter, then of Washington, aforesaid, were the original, first, and joint inventors of certain new and useful improvements in recording and reproducing speech and other sounds, which were not known or used in this country, or patented or described in this or any foreign country, prior to their invention thereof, and which had not been in public use or on sale in the United States for more than two years prior to their application for letters patent therefor.

II.

That on the 27th day of June, 1885, the said Chichester A. Bell and Sumner Tainter made application in due form of law to the Commissioner of Patents for the grant of letters patent of the United States for the said invention, and then and there fully complied in all respects with the provisions and requirements of the laws of the United States in such case made and provided.

III.

That, due proceedings being had upon said application, upon the 4th day of May, 1886, letters patent of the United States, in due form of law, were issued and delivered to said Chichester A. Bell and Sumner Tainter, in the name of the United States, under the seal of the Patent Office, and signed and countersigned respectively by the proper officers of the United States, and numbered 341,214, granting to said Chichester A. Bell and Sumner Tainter, their heirs or assigns, for the term of seventeen years from said 4th day of May, 1886, the full and exclusive right to make, use, and vend the said invention through-

out the United States and the Territories thereof, as by reference to said letters patent, or a duly authenticated copy thereof, here in court to be produced, will more fully and at large appear.

IV.

That the said Sumner Tainter was further the original, first and sole inventor of a certain new and useful improvement in apparatus for recording and reproducing sounds or sonorous vibrations, not known or used in this country, or patented or described in any printed publication in this or any foreign country, prior to his invention thereof, and not in public use or on sale in the United States for more than two years prior to his application for letters patent therefor.

V.

That on the 4th day of December, 1885, said Sumner Tainter made application in due form of law to the Commissioner of Patents for the grant of letters patent of the United States for said invention, and then and there fully complied in all respects with the requirements and provisions of the laws of the United States in such case made and provided.

VI.

That, due proceedings upon said application being had, upon the 4th day of May, 1886, letters patent of the United States in due form of law were issued and delivered to said Sumner Tainter, in the name of the United States, under the seal of the Patent Office, signed and countersigned respectively by the proper officers of the United States, and numbered 341,288, granting to said Sumner Tainter, his heirs or assigns, for the term of seventeen years from said 4th day of May, 1886, the full and exclusive right to make, use, and vend the said in-

vention throughout the United States and the Territories thereof, as by reference to said letters patent, or a duly-authenticated copy thereof, here in court to be produced, will more fully and at large appear.

VII.

That the inventions or improvements described and claimed in said patent to Sumner Tainter were designed for and are capable of use conjointly, and are used conjointly with the improvements or inventions described and claimed in the patent aforesaid of Bell and Tainter in recording and reproducing sounds.

VIII.

And your orator further shows that on the 29th day of March, 1887, said Chichester A. Bell and Sumner Tainter, by an instrument in writing duly signed, delivered, and recorded in the United States Patent Office the 22d day of September, 1887, did give, grant, and convey to The Volta Graphophone Company, a corporation organized and existing under the laws of the State of Virginia, its successors and assigns, the entire right, title and interest in and to said letters patent No. 341,214, granted to them as aforesaid, and in and to the invention secured thereby, as by reference to said instrument, or to a duly-authenticated copy thereof, here in court to be produced will more fully and at large appear.

IX.

That on the 29th day of March, 1887, said Sumner Tainter, by an instrument in writing, duly signed and delivered and recorded in the United States Patent Office the 5th day of April, 1887, did give, grant, assign, and convey to the said The Volta Graphophone Company, its successors and assigns, the entire right, title, and interest

in and to said letters patent No. 341,288, granted to him as aforesaid, and in and to the invention secured thereby, as by reference to said instrument, or a duly-authenticated copy thereof, here in court to be produced, will more fully and at large appear.

X.

That on the 24th day of January, 1893, the said The Volta Graphophone Company, by an instrument in writing, duly signed, sealed, and delivered, and recorded in the United States Patent Office the 25th day of January, 1893, did give, grant, assign, and convey to your orator, its successors and assigns, the entire right, title, and interest in and to said letters patent No. 341,214 and No. 341,288, and in and to the inventions secured thereby, as by reference to said instrument, or a duly-authenticated copy thereof here in court to be produced, will more fully and at large appear.

XI.

That your orator has been, since the date of the assignment last mentioned, and is now, the owner of the said letters patent, and each of them, and of the rights and privileges secured thereby, and has been and is, save for the doings of this defendant and others acting in concert with him, in the exclusive possession of said rights and privileges, and is entitled to the exclusive use, benefits, and advantages of the said inventions and improvements.

XII.

And your orator further shows that the said inventions and improvements are of great commercial value and practical utility; that a great public interest has been manifested therein, and a large demand created for apparatus constructed in accordance with or embodying

the same; that in order to supply this demand and to confer upon the public the advantages and benefits of the said inventions, your orator and its predecessors in the title have invested large capital in acquiring said patents and in adapting and perfecting such apparatus, and have at great expense devised and constructed machinery, tools, appliances, and other accessories necessary or useful in the manufacture of such apparatus, and have employed numerous skilled workmen, inventors, and mechanics in connection therewith; and that such investment has been made and such expense incurred upon the faith reposed in the said letters patent granted by the Government of the United States as aforesaid, and in the rights and privileges secured thereby.

XIII.

And your orator shows, upon information and belief, that this defendant and others, acting in concert with him, since the grant of said letters patent, and each of them, and since the date of the assignment last above mentioned, within the said Northern District of Illinois, and elsewhere in the United States, wrongfully, unlawfully, and with intent to injure your orator, and to deprive it of the just profits resulting from making, using, and vending said inventions, have, without the license or consent of your orator, made or caused to be made, used or caused to be used, and sold or caused to be sold, apparatus for recording and reproducing sounds, known as "phonographs," each and all containing or embodying or operating in accordance with the said inventions or improvements, substantially as described and claimed in the said letters patent, and each of them, and in infringement of the exclusive rights granted to your orator, as aforesaid; and that the said defendant has derived, and received, and still is deriving and receiving, great gains and profits from such unlawful use, but to what extent your orator is ignorant, and cannot set forth.

XIV.

That each such machine or apparatus so made, used, and sold by the defendant contains, embodies, or operates in accordance with the inventions or improvements covered by both the letters patent aforesaid, or material and substantial parts thereof..

XV.

And your orator therefore prays as follows:

(1) That the said defendant may be required by a decree of this Honorable Court to account for and pay over unto your orator all such gains and profits as have accrued or arisen, or been earned or received by the said defendant , and all such gains and profits as would have accrued to your orator but for the unlawful doings of said defendant , and all damages your orator has sustained thereby; and

(2) That the defendant , his associates, attorneys, servants, clerks, agents, and workmen, may be perpetually enjoined and restrained, by a writ of injunction issuing out of and under the seal of this Honorable Court, from directly or indirectly making or causing to be made, using or causing to be used, selling or causing to be sold, any machine or apparatus embodying or constructed or operating in accordance with the inventions or improvements set forth in the letters patent aforesaid, or either of them; and

(3) That your Honors will grant unto your orator a preliminary injunction, issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendant , his associates, servants, clerks, agents, and workmen, to the same purpose, tenor, and effect as hereinbefore prayed for, with regard to said perpetual injunction; and

UNITED STATES CIRCUIT COURT

NORTHERN DISTRICT OF ILLINOIS.

-:-:-:-:-:-

AMERICAN GRAPHOPHONE COMPANY,	
	IN EQUITY.
-vs-	
	GENL.NO.23,983.
EDWARD H.AMET.	Term NO. 719.

The answer of Edward H.Amet to the bill of complaint of the American Graphophone Company;

This defendant, now and at all times hereafter saving and reserving unto himself all benefits and advantages of exception which can or may be had or taken to the many errors, uncertainties and other imperfections in the said complainant's bill of complaint contained, for answer thereto, or to so much and such parts thereof as he is advised is material or necessary to make answer unto, answering, says:

That as to whether the complainant is a corporation organized and existing under the laws of the State of West Virginia, as alleged in said bill of complaint, this defendant does not know and is not informed save by said bill, and therefore leaves the complainant to make such proof thereof as it may be advised is material.

That he admits that Letters Patent of the United States No. 341,214 were granted upon the 4th.day of May, 1886, upon an application of Chichester A.Bell and Sumner Taintor, but he is not in-

formed, save by said bill of complaint, and therefore upon information and belief denies that said Chichester A.Bell and Sumner Taintor made application in due form of law to the Commissioner of Patents for the grant of said Letters Patent; that they complied with the provisions and requirements of the laws of the United States in such case made and provided; that due proceedings where had upon such application; that said Letters Patent were signed and countersigned respectively by the proper officers of the United States, and that by virtue of the said Letters Patent the said Chichester A.Bell and Sumner Taintor, their heirs or assigns, became possessed, for the term of seventeen years, from the said 4th day of May, 1886, or for any term, of the full and exclusive right, or any right, to make, use and vend the alleged inventions covered by said Letters Patent throughout the United States and the Territories thereof.

That he admits that Letters Patent of the United States No. 341,288 were granted upon the 4th day of May, 1886, upon an application of Sumner Taintor, but he is not informed, save by said bill of complaint, and, therefore, upon information and belief, denies that said Sumner Taintor made application in due form of law to the Commissioner of Patents for the grant of said Letters Patent; that he complied with the provisions and requirements of the laws of the United States in such case made and provided; that due proceedings were had upon such application; that said Letters Patent were signed and countersigned respectively by the proper officers of the United States, and that by virtue of said Letters Patent the said Sumner Taintor, his heirs or assigns, became possessed, for the term of seventeen years from the said fourth day

of May, 1886, or for any term, of the full and exclusive right, or any right, to make, use and vend the alleged inventions covered by said Letters Patent throughout the United States and the Territories thereof.

That he denies that the inventions or improvements alleged to be described and claimed in said Letters Patent Nos. 341,214 and 341,288, are capable of use conjointly; and denies that they are, in fact, used conjointly, and that in any apparatus made, used or sold, either by the complainant or said defendant, they are so used.

That as to whether, on the 29th day of March, 1885, or at any time, the said Chichester A. Bell and Sumner Taintor, by an instrument in writing, duly signed, delivered and recorded in the United States Patent Office the 22nd day of September, 1887, did give, grant and convey to The Volta Graphophone Company, its successors and assigns, the entire or any right, title and interest in and to said Letters Patent No. 341,214, and in and to the inventions alleged to be secured thereby, this defendant is not informed, save by said bill of complaint, and therefore, upon information and belief, denies. That as to whether, upon the 29th day of March, 1887, the said Sumner Taintor, by an instrument in writing duly signed and delivered and recorded in the Patent Office of the United States the 5th day of April, 1887, did give, grant, assign and convey to the said The Volta Graphophone Company, its successors and assigns, the entire or any right, title and interest in and to said Letters Patent No. 341,288, and in and to the inventions alleged to be secured thereby, this defendant is not informed, save by said bill of complaint, and therefore, upon information and belief, de-

nies.

That as to whether, on the 24th day of February, 1893, the said The Volta Graphophone Company, by an instrument in writing duly signed, sealed and delivered and recorded in the United States Patent Office the 25th day of January, 1893, did give, grant, assign and convey to the complainant, its successors and assigns, the entire or any right, title and interest in and to said Letters Patent Nos. 341,214 and 341,288, and in and to the inventions alleged to be secured thereby, this defendant is not informed, save by said bill of complaint, and therefore, upon information and belief, denies.

, That upon information and belief, he denies that the complainant has been, since the 24th day of January, 1893, or that it now is, the owner of the said Letters Patent Nos. 341,214 and 341,288, or any rights or privileges alleged to be secured thereby. And the defendant further denies, upon information and belief, that the said complainant has been at any time in the exclusive possession of the said rights and privileges, and that it is entitled to the exclusive, or any other use, benefits and advantages of the said alleged inventions and improvements.

That the defendant further denies that the said alleged inventions or improvements are of great or any commercial value and practical utility; that any public interest has been manifested therein; that any demand has been created for apparatus constructed in accordance with or embodying the said alleged inventions; that, in order to supply this demand and to confer upon the public any advantages and benefits of the said alleged inventions, the complainant and its alleged predecessors in the title to said letters patent and inventions have invested any capital whatever

in accuiring said patents and in adapting and perfecting such apparatus. And the defendant further denies, upon information and belief, that the complainant has at any expense devised and constructed machinery, tools, appliances and other accessories necessary or useful in the manufacture of such apparatus; that it has employed numerous skilled workmen, inventors and mechanics in connection therewith, and that such investment has been made and such expense incurred upon the faith imposed in said letters patent, and in any rights and privileges alleged to be secured thereby.

On the contrary, the defendant avers that the said alleged inventions and improvements are of no commercial value or practical utility whatever; that no public interest has ever been manufested therein, and that no demand has ever existed or been created for apparatus constructed in accordance wi h or embodying the said alleged inventions.

That the said defendant further denies that he, or that others acting in concert with him, since the grant of said letters patent and each of them, and since the date of the assignment last above mentioned, or, in fact, at any time, either within the said Northern District of Illinois, or elsewhere in the United States, wrongfully, unlawfully or with intent to injure the complainant and to deprive it of any profits resulting from the making, using and vending of the said alleged inventions, has or have, without the license and consent of said complainant, made, or caused to be made, used or caused to be used, or sold, or caused to be sold, apparatus for recording and reproducing sounds, known as phonographs, each or all containing or embodying, or operating in accordance with, the said alleged inventions or improvements described and claimed in the said letters patent or either of them. And the

defendant further denies that he has done any acts or things whatever in infringement of the exclusive rights alleged to be granted to the complainant, or that he has derived or received, or is still deriving or receiving, any gains and profits whatever from such unlawful use.

That the defendant xxxx denies that any machine or apparatus made, used or sold by him contains, embodies or operates in accordance with the alleged inventions or improvements covered by the said letters patent, or that they contain, embody, or operate in accordance with any material or substantial parts of said alleged inventions or improvements.

That on information and belief, the alleged inventions or improvements set forth in said letters patent Nos, 341, 214 and 341, 288 were in public use within the United States for more than two years prior to any application by said Sumner Taintor and Chichester A.Bell and by said Sumner Taintor for said letters patent

That upon information and belief, the alledged inventions and improvements set forth in said letters patent Nos.341, 214 and 341, 288 were in sale within the United States for more than two years prior to any application by the said Sumner Taintor and Chichester A.Bell and by said Sumner Taintor for said letters patent.

That upon information and belief, the said Chichester A.Bell and Sumner Taintor were not the original or first or joint inventors of any alleged inventions or improvements set forth in said letters patent No.341, 214, and that the said Sumner Taintor was not the original or first or sole inventor of any alleged inventions or improvements set forth in said letters patent No. 341, 288.

That, upon information and belief, the said letters patent Nos 341,214 and 341,288 were surreptitiously and unjustly obtained for that which was, in fact, invented by another, to wit, by Thomas A.Edison, then of Menlo Park, New Jersey, and now residing at Llewellyn Park, New Jersey, who was using reasonable diligence in adapting and perfecting the same, and was suggested to the said Bell and Taintor and to said Sumner Taintor by what they had seen in common use and on sale.

And said defendant further answering says, on information and belief, that the said Bell and Taintor were not the original and first inventors and discoverers of the alleged inventions or improvements in said Letters Patent No.341,214 set forth, or any substantial or material part thereof, and that said Sumner Taintor was not the original and first inventor or discoverer of the alleged inventions or improvements in said Letters Patent No.341288 set forth, or any substantial or material part thereof, and that the said alleged inventions or improvements, and all the substantial and material parts thereof, were long prior to any invention by the said Bell and Taintor, either known to or used by, or both known to and used by, the following persons, at the places hereinafter named, and whose last known addresses are hereinafterstated, namely:

Thomas A.Edison, of Llewllyn Park, N.J. Known or used at Menlo Park, N.J and at New York, N.Y. and elsewhere.

John F.Ott, of Orange, N.J. Known or used at Menlo Park, N.J; Orange, N.J; New York, N.Y., and elsewhere.

Edward H.Johnson, of Greenwich, Ct. Known or used at Menlo Park, N.J. and New York, N.Y., and elsewhere.

Charles Batchelor, of New York, N.Y. Known or used at Menlo Park, N.J New York, N.Y., and elsewhere.

John Kruesi, of Schnectady, N.Y. Knnwn or used at Menlo Park, N.J.; New York, N.Y., and elsewhere.

James U.McKenzie, of Brooklyn, N.Y. Known or used at Menlo Park, N.J; New York, N.Y., and elsewhere.

George H.Herrington, , of Wichita, Kansas, Known or used at Wichita, Kansas, and elsewhere.

Frank Lambert, of Brooklyn, N.Y., Known or used at Ansonia, Conn.; Jamaica, Brooklyn and New York, N.Y, and elsewhere.

Eugene Pastre, of Brooklyn, N.Y., Known or used at Ansonia, Conn., and Jamaica, Brooklyn and New York, N.Y., and elsewhere.

Walter D. Davis, of Brooklyn, Known or used at Ansonia, Conn., and Jamaica, Brooklyn, New York, N.Y., and elsewhere.

Isaac .W. Heysinger, of Philadelphia, Pa., Known or used at Philadelphia, Pa., and elsewhere.

Ansonia Clock Company, of Ansonia, Conn., Known or used at Ansonia, Conn., and elsewhere.

Clarence J. Blake, of Boston, Mass., Known or used at Boston, Mass., Washington, D.C., and elsewhere.

Clarnce E. Gifford, of Jamestown, N.Y., Known or used at Jamestown, N.Y.; Chicago, Ill.; Lewiston, Pa., and elsewhere.

Sigmund Bergmann, of New York, N.Y., Known or used at Menlo Park, N.J., and elsewhere.

Theodore W. Searing, of New York, N.Y., and elsewhere.

C.H. Field, of Providence, R.I., Known or used at Providence, R.I., and elsewhere.

O.H. Bogardus, of Syracuse, N.Y., Known or used at Syracuse, N.Y., and elsewhere.

Theodore Cooper, of Crompton, Mills, Warwick, R.I., Known or used at Crompton Mills, Warwick and Providence, R.I., and elsewhere.

T. Kennedy, of Mt. Carmel, Conn., Known or used at Mt. Carmel, Conn., and elsewhere.

Ralph S. Mershon, of Zanesville, Ohio, Known or used at Zanesville, Ohio, and elsewhere.

L. Hillman, of Newton, N.J., Known or used at Newton, N.J., and elsewhere.

Frederick B. Miles, of Philadelphis, Pa., Known or used at Philadelphia, Pa., and elsewhere.

James M.Connor, of Brooklyn, N.Y., Known or used at Brooklyn, N.Y., and elsewhere.

George R.Babbitt, of of Providence, R.I., Known or used at Providence, R.I., and elsewhere.

John C.Guerrant, of Danville, W Va., Known or used at Danville, Va., and elsewhere.

Robert R.Atchison, of Boston, Mass., Known or used at Boston, Mass, and elsewhere.

Loring Pickering, of San Francisco, Cal., Known or used at San Francisco, Cal., and elsewhere.

A.Wilford Hall, of New York, N.Y., Known or used at New York, N.Y., and elsewhere.

Thomas L.Luders, of Philadelphia, Pa., Known or used at Philadelphia Pa., and elsewhere.

Milton Bradley, of Springfield, Mass., Known or used at Springfield, Mass., and elsewhere.

Robert M.Lockwood, of New York, N.Y., Known or used at New York, N.Y. and elsewhere.

William A.Leggo, of New York, N.Y., Known or used at New York, N.Y., and elsewhere.

A.S.Nichols, of New Haven, Conn., Known or used at New Haven, Conn., and elsewhere.

J.Harris Rogers, of Washington, D.C., Known or used at Washington, D. D., and elsewhere.

James Webb Rogers, of New York, N.Y., Known or used at New York, N.Y. and elsewhere.

Christopher C.Reynolds, of Prescott, Arizona, Known or used at Prescott, Arizona, and elsewhere.

John Absterdam, of New York, N.Y., Known or used at New York, N.Y., and elsewhere.

Rufus Anderson, of Peekskill, N.Y., Known or used at Peekskill, N.Y., and elsewhere.

George M. Guerrant, of New York, N.Y., Known or used at New York, N.Y. Danville, Va., and elsewhere.

Seth E. Beedy, of Farmington, Me., Known or used at Farmington, Me., and elsewhere.

John J. Linscott, of Farmington, Me., Known or used at Farmington, Me. and elsewhere.

Collett Leventhorpe, of Rutherfordton, N.C., Known or used at Rutherfordton, N.C.; Danville, Va., and elsewhere.

Samuel H. Bartlett, of New York, Known or used at New York, N.Y., and elsewhere.

The Molecular Telephone Company, of New York, N.Y., Known or used at New York, N.Y., and elsewhere.

Emile Berliner, of Washington, D.C. Known or used at Washington, D.C. and elsewhere.

and many other persons, at many other places in the United States, but whose names and addresses are at present unknown to this defendant, but which he prays leave to disclose as soon as the same can be ascertained, and to amend this answer by inserting therein such allegations concerning such other persons as are hereinbefore made concerning those now known to this defendant as aforesaid.

And said defendant further answering says, on information and belief, that the said Bell and Taintor were not the original and first inventors or discoverers of the alleged inventions or improvements in said Letters Patent No. 341,241 set forth, or any substantial or material part thereof; that said Sumner Taintor was not the original and first inventor or discoverer of the alleged improvement in said Letters Patent No. 341,288 set forth, or any

substantial or material part thereof;and that the said alleged inventions or improvements and all the substantial and material parts thereof were, long prior to any invention by the said Bell and Taintor and by the said Sumner Taintor, set forth in the following Letters Patent, namely:

Letters Patent of the United States as follows:

Charles H.Field, No.17,146 dated April 28,1857.

O.H.Bogardus No.32,959, dated July 30,1861.

T.Kennedy, No.52,294, dated January 30,1866.

Theodore Cooper, No.56,141, dated July 3,1866.

Ralph S.Mershon, No.72,521, dated December 24,1867.

L.Hillman, No.93,619, dated August 10,1869.

James M.Connor, No.115,934, dated June 13,1871.

Frederick B.Miles, No.111,859, dated February 14,1871.

George R.Babbitt, No.133,212, dated July 21,1874.

Robert R.Atchinson, No.174,715, dated March 14,1876.

John C.Guerrant, No.183,920, dated October 31,1876.

Loring Pickering, No.191,464, dated May 29,1877.

Thomas A.Edison, No.200,521, dated February 19,1878.

Thomas A.Edison, No.201,760, dated March 26,1878.

Thomas A.Edison, No.213,554, dated March 25,1879.

A.Wilford Hall, No. 219,939, dated September 23,1879.

Thomas L.Luders, No.222,292, dated December 2,1879.

Milton Bradley, No.225,457, dated March 16,1880.

Thomas A.Edison, No.227,679, dated May 18,1880.

Robert M.Lockwood, et al, No.231,065, dated August 10,1880.

John W.Kenyon, No.232,978, dated October 5,1880.

William A.Leggo, No.238,929, dated March 15,1881.

Seth E.Beedy, No.268,746, dated October 31,1882.

A.S.Nichols, No. 271,903, dated February 6, 1883.

J.Harris Rogers, No.277,349, dated May 8, 1883.

James H.M.Waldorp, No.279,292, dated June 12, 1883.

James W.Rogers, No.283,865, dated August 21, 1883.

Christopher C.Reynolds, No.287,168, dated October 23, 1883.

John Absterdam, No.295,219, dated March 18, 1884.

Rufus Anderson, No.296,376, dated April 8, 1884.

Albert Schmid, No.298,030, dated May 6, 1884.

George M.Guerrant et al No.305,178, dated September 16, 1884.

Letters Patent of Great Britain as follows:

William Mann, No.1912 dated 1857.

Aime L.E.Briettmayer, No.324, dated 1880.

Henry B.Greenwood, No.225, dated 1870.

Thomas A.Edison, No.2909 dated 1877.

Thomas A.Edison, No.1644, dated 1878.

Herbert J.Hadden, No.291, dated 1882.

Letters Patent of France as follows:

Thomas A.Edison, No.121,687, dated February 19, 1878.
Patent of Addition thereto February 19, 1878.

Thomas A.Edison, No.124,974, dated September 16, 1878.

Charles Cros, No.124,213, dated July 27, 1878.
Patent of Addition thereto October 8, 1878.

Antonio Vincini, No.128,213, dated March 17, 1879.

Charles Weyher, No.133,886, dated May 20, 1880.
Patent of Addition thereto March 23, 1880.
Patent of Addition thereto June 11, 1880.
Patent of Addition thereto September 20, 1883.

Paul Golubitsky, No.145,381, dated December 7, 1881.
Patent of Addition thereto March 15, 1882
Patent of Addition thereto September 26, 1882.
Patent of Addition thereto September 20, 1882.

Morel No.146,870, dated March 17, 1882.

Morel, No.146,673, dated March 17, 1882.

Claude A.Terrier, No.130,749, dated November 8, 1883.

Letters Patent of Germany as follows:

Thomas A.Edison, No.16,281, dated July 12, 1878.

Kleist & Company, No.11,053, dated January 24, 1879.

Thomas A.Edison, No.14,306, dated August 18, 1881.

Thomas A.Edison, No.12,631, dated April 27, 1881.

Letters Patent of Canada as follows:

Thomas A.Edison, No.8028, dated October 17, 1877, issued Oct.20, 1877.

Thomas A.Edison, No.9282, dated October 19 1878.

Also the following Letters Patent granted to Thomas A.Edison in the countries named, to wit:

Belgium, No.43,984, dated January 31, 1878, and No.45,375, dated June 29, 1878.

Italy, No.422, dated February 8, 1878 and No , dated July 4 1878.

Austria, dated January 1, 1879, and dated January 8, 1879.

Spain, dated May 6, 1878.

Russia, No.1101, dated February 15/ 27, 1882.

Norway, dated October 8, 1878.

Sweden, dated March 29, 1879.

Denmark, No.1345, dated October 31, 1878.

India, deposited March 20, 1879.

New South Wales, dated September 16, 1878.

Victoria, dated August 13, 1878, and No.2549, dated August 15, 1878.

also many other letters patent as to the dates, numbers and descriptions of which this defendant is at present ignorant, but which he begs leave to disclose as soon as the same shall have been ascertained, and to amend this answer by inserting the same allegations concerning such other letters patent as are hereinbefore made concerning those now known to the defendant as aforesaid.

And said defendant further answering, on information and belief, says that the said Bell and Taintor were not the original and first inventors and discoverers of the alleged inventions or improvements in said Letters Patent No.341,214 set forth, or any substantial or material part thereof, and that said Sumner Taintor was not the original and first inventor or discoverer of the alleged inventions or improvements in said Letters Patent No.341288 set forth, or any substantial or material parts thereof, and that the alleged inventions or improvements and all the substantial and material parts thereof, were long prior to any invention by the said Bell and Taintor, and by the said Sumner Taintor, set forth in the following printed publications, namely:

The specifications and drawings of each and all letters patent enumerated in the last preceeding allegation, the United States Letters Patent so enumerated having been published on or about the day of their date by the United States Patent Office at Washington, D.C., the Letters Patent of Great Britain so enumerated having been published on or about the day of their date by the Great Seal Patent Office, London, England, and the Letters Patent of other foreign countries so enumerated having been published on or about the day of their date by the Patent Offices of those respective countries:

Chemical News and Jornal of Physical Science, Vol.37, page 99 et seq., published at London, March 8th, 1878, by William Crookes.

Chambers Journal, Vol.55, page 128 et seq., published at London and Edinburg, February 23rd, 1878, by W.and R.Chambers.

Chambers Journal, Vol.55, page 200, et seq., published at London and Edinburg, March 30th, 1878, by W.and R.Chambers.

Chambers Journal, Vol.55, page 250 et seq., published at London and Edinburg, April 20th, 1878, by W.and R.Chambers.

Engineering, Vol.25, page 187 et seq., published at London, March 8th, 1878, edited by W.H.Maw and J.Dredge.

The Engineer, Vol.46, page 84 et seq., published at London, Aug.2nd, 1878, by George Leopold Richie.

The Engineer, Vol.56, page 283 et seq., published at London, October 12th, 1883, by George Leopold Richie.

The Engineer, Vol.56, page 301 et seq., published at London, October 19th, 1883, by George Leopold Richie.

The Gentleman's Magazine, Vol.20, New Series, page 688 et seq., published at London, June 1878, by Chatto and Windus.

Harper's New Monthly Magazine, Vol.57, page 312 et seq., published at New York, July 1878, by Harper & Brothers.

Harper's New Monthly Magazine, Vol.57, page 470 et seq., published at New York, August 1878, by Harper & Brothers.

Harper's New Monthly Magazine, Vol.57, page 632 et seq., published at New York, September 1878, by Harper & Brothers.

Harper's Weekly, Vol.22, page 249 et seq., published at New York, March 30th, 1878, by Harper & Brothers.

Iron, Vol.11, page 301 et seq., published at London, March 9th, 1878, by "Iron" offices.

Iron Age, page 27 et seq., of issue of June 27th, 1878, published at New York, by David Williams.

Iron Age, page 24 et seq., of issue of March 28th.1878, published at New York, by David Williams.

Iron Age, page 5 et seq., of issue of May 23rd, 1878, published at New York, by David Williams.

Iron Age, page 9 et seq., of August 22nd, 1878, published at New York, by David Williams.

Journal of the Society of Telegraph Engineers and Electricians, Vol.7, page 68 et seq., published at London, Feb.27th, 1878, by E.[illegible]

F.W.Spon.

Journal of the Franklin Institute, Vol.75, page 266 et seq., published at Philadelphia, April, 1878, by the Franklin Institute.

Journal of the Franklin Institute, Vol.75, page 348 et seq./published at Philadelphia, May 1878, by the Franklin Institute.

Journal of the Franklin Institute, Vol.84, page 49 et seq., published at Philadelphia, July, 1882, by the Franklin Institute.

Journal of the Society of Arts, Vol.26, page 109 et seq., published at London, January 11th, 1878, by George Bell & Sons.

Journal of the Society of Arts, Vol.26, page 543 et seq., published at London, May 10th, 1878, by George Bell & Sons.

Knight's New Mechanical Dictionary, page 671, et seq., published at Boston in the year 1884, by Houghton, Mifflin & Company.

Manufacturer and Builder, Vol.10, page 84 et seq., published at New York, April, 1878, by H.N.Black.

Manufacturer and Builder, Vol.10, page 173 et seq., published at New York, August , 1878, by H.N.Black.

Manufacturer and Builder, Vol.11, page 95 et seq., published at New York, April, 1879, by H.N.Black.

Mechanics, Vol.5, page 319 et seq., published at London and New York ~~xxxxxxxx~~ April 26, 1884.

Nature, Vol.17, page 90 et seq., published at London and New York, November 29th, 1877, by Macmillan & Co.

Nature , Vol.17, page 190 et seq., published at London and New York, January 3rd, 1878, by Macmillan & Co.,

Nature, Vol.17, page 291 et seq., published at London and New York, February 7th, 1878, by Macmillan & Co.

Nature, Vol.17, page 415 et seq., published at London and New York, by Macmillan & Co.

Nature, Vol.17, page 384, et seq., published at London and New York, March 17, 1878, by Macmillan & Co.

Nature, Vol.17, page 423 et seq., published at London and New York, March 28th, 1878, by Macmillan & Co.

Nature, Vol.17, page 471 et seq., published at London and New York, April 11th, 1878, by Macmillan & Co.

Nature, Vol.18, pages 93 and 101 et seq., published at London and New York, May 9th, 1878, by Macmillan & Co.

Nature, Vol.18, pages 93 and 101 et seq., published at London and New York, May 23rd, 1878, by Macmillan & Co.

Nature, Vol.18, page 117 et seq., published at London and New York, May 30th, 1878, by Macmillan & Co.

Nature, Vol.18, page 168 et seq., published at London and New York, June 13th, 1878, by Macmillan & Co.

Nature, Vol.18, page 240 et seq., published at London and New York, June 27th.1878, by Macmillan & Co.

Nature, Vol.18, page 249, et seq., published at London and New York, July 4th, 1878, by Macmillan & Co.

Nature, Vol.18, page 302, et seq., published at London and New York, July 18th.1878, by Macmillan & Co.

Nature, Vol.18, page 340 et seq., published at London and New York, July 25th, 1878, by Macmillan & Co.

Nature, Vol.18, page 394 et seq., published at London and New York, August 8th, 1878, by Macmillan & Co.

Nature, Vol.18, page 454, et seq, published at London and New York, August 22, 1878, by Macmillan & Co.

Nature, Vol.19, page 122 et seq., published at London and New York, December 12th, 1878, by Macmilland & Co.

Nature, Vol.19, page 374, et seq., published at London and New York, Febru ary 25th, 1879, by Macmillan & Co.

Nature, Vol.23, page 373 et seq., published at London and New York, February 17th, 1878, by Macmillan & Co.

Nature, Vol.23, page 441 etseq., published at London and New York, March 10th, 1881, by Macmillan & Co.

Nature, Vol.29, page 430 et seq., published at London and New York, March 13th, 1884, by Macmillan & Co.

The New York Times, published at New York City, issue of March 24th, 1878.

The New York Times, published at New York City, issue of April 20th, 1878.

The New York Times, published at New York City, issue of April 21st, 1878.

The New York Times, published at New York City, issue of June, 9th, 1878.

The New York Times, published at New York City, issue of Feb, 1st, 1880.

The New York Tribune, published at New York City, issue of December 26th, 1877.

The New York Tribune, published at New York City, issue of January 18th.1878.

The New York Tribune, published at New York City, issue of March 25th, 1878.

The New York Tribune, published at New York City, issue of April 6th, 1878.

The New York Tribune, published at New York City, issue of April 20th, 1878.

The New York Tribune, published at New York City, issue of March 21st, 1878.

North American Review, Vol.126, page 527 et seq, published at New York, May - June, 1878, by D.Appleton & Co.

Popular Science Monthly, Vol.12, pages 719 et seq.and 748 et seq., published at New York, April , 1878, by D.Appleton & Co.

Quarterly Journal of Science, Vol.8, New Series (Vol.13 Old Series), page 245, et seq., published at London, 1878, at Offices of the Quarterly Journal of Science.

Scientific American, Vol.37, page 370, published at New York, December 17th, 1877, by Munn & Co.

Scientific American, Vol.37, page 384, et seq., published at New York, December 22, 1877, by Munn & Co.

Scientific American, Vol.38, page 3 et seq., published at New York January 5th, 1878, by Munn & Co.

Scientific American, Vol.38, page 80 et seq., published at New York, February 9th, 1878, by Munn & Co.

Scientific American, Vol.38, page 384 et seq., published at New York, June 22nd, 1878, by Munn & Co.

Scientific American, Vol.38, page 405 et seq., published at New York, June 29th, 1878, by Munn & Co.

Scientific American, Vol.40, page 350, et seq., published at New York, June 7th, 1879, by Munn & Co.

Scientific American, Vol.39, page 5 et seq., published at New York, July 6th, 1878, by Munn & Co.

Scientific American, Vol.39, page 17 et seq., published at New York, July , 13th, 1878, by Munn & Co.

Scientific American Supplement, page 1828 et seq., published at New York, March 16th, 1878, by Munn & Co.

Scientific American Supplement, page 1893 et seq., published at New York, April 13th. 1878, by Munn & Co.

Scientific American Supplement, page 1904 et seq., published at New York, April 20th. 1878, by Munn & Co.

Scientific American Supplement, page 1973 et seq., published at New York, May 18th, 1878, by Munn & Co.

Scientific American Supplement, page2187 et seq., published at New York, August 24th, 1878, by Munn & Co.

Scientific American Supplement, page 3454 et seq., published at New York, February , 28th, 1880 1880, by Munn & Co.

Scientific American Supplement, page 2113, et seq., published at New York, July 20th, 1878, by Munn & Co.

The Telegraphic Journal and Electrical Review, Vol.6, page 6 et seq published at London, January 1st, 1878, by Houghton & Company.

The telegraphic Journal and Electrical Review, Vol.6, page 182 et seq., published at London, May 1st, 1878, by Houghton & Company.

The telegraphic Journal and Electrical Review, Vol.6, page 250 et seq., published at London, June 15th, 1878, by Houghton & Company.

The Telegraphic Journal and Electrical Review, Vol.6, page 53, et seq., published at London, February 1st, 1878, by Houghton & Company.

The Telegraphic Journal and Electrical Review, Vol.6, page 142 et seq., published at London, April 1st, 1878, by Houghton & Company.

The Telegraphic Journal and Electrical Review, Vol.6, page 275 et seq., published at London, July 1st, 1878, by Houghton & Company.

The Telegraphic Journal and Electrical Review, Vol.6, page 317 et seq., published at London, August 1st, 1878, by Houghton & Company.

The Telegraphic Journal and Electrical Review, Vol.6, page 385 et seq., published at London, September 15, 1878, by Houghton & Company.

The TelegraphicHournal and Electrical Review, Vol.7, page 53 et seq published at London, February 1st, 1879, by Houghton & Company.

The Telegraphic Journal and Electricah Review, Vol.7, page 253 et seq., published at London July 15th, 1878, by Houghton & Company.

Western Review, Vol.1, page 681 et seq., published at Kansas City, Mo January 1878.

Western Review, Vol.2, page 256, et seq., published at Kansas City, Mo., July , 1878.

Annual Report of Science and Industry, Vol.7, page 399 et seq., published at New York, 1877.

The American Inventor, Vol.1, page 112 et seq., published at Cincinnati, Ohio, July, 1878.

The American Inventor, Vol.1, page 42 et seq., published at Cincinnati, Ohio, March 1878.

Boston Journal of Chemistry and Popular Science Review, Vol.12, page 122, et seq., Published at Boston, Mass. May 1878.

Boston Journal of Chemistry and Popular Science Review, Vol.16, page 76 et seq., published at Boston, Mass, July, 1882.

English Mechanic and World of Science, Vol.26, page 275, et seq., published at London, November 30th, 1877, by Walter Sully.

English Mechanic and World of Science, Vol.26, page 409 et seq., published at London, January 4, 1878, by Walter Sully.

English Mechanic and World of Science, Vol.26, page 427 et seq., piblished at London, January 11th, 1878, by Walter Sully.

English Mechanic and World of Science, Vol.27, page 30 et seq., published at London, March 22nd, 1878, by Walter Sully.

English Mechanic and World of Science, Vol.27, page 559 et seq., published at London, September 6th, 1878, by Walter Sully.

English Mechanic and World of Science, Vol.29, page 155 et seq., published at London, April 25th, 1879, by Walter Sully.

Industrial News, Vol.3, page 28 et seq., published at New York February, 1882, by the Inventors' Institute.

Minutes of Proceedings of the Institution of Civil Engineers, Vol. 53, page 392, et seq., published at London, 1878, by the Institution of Civil Engineers.

Scientific and Literay Review and Journal of the Inventors' Institute, Vol.13, page 83 et seq., published at London, June, 1878.

Science News, Vol. 1, page 202 et seq., published at Salem, Mass., May 1st, 1879.

Transactions of the Royal Society of Edinburg, published at Edinburg, July 19, 1878.

The Year Book of Facts in Science and the Arts, pages 86 and 88, published at London, 1878.

Appleton's Cyclopaedia of Applied Mechanics, page 531 et seq., published at New York, 1879, by D. Appleton & Co.

The Advertiser, issue of May 9th. 1878, published at Paris, France.

Daily Evening Traveler, issue of May 23rd, 1878, published at Boston Mass.

Boston Courier, issue of June 2nd, 1878, published at Boston, Mass.

Boston Herald, issue of June 1st, 1878, published at Boston, Mass.

Baltimore Daily News, issue of April 29th, 1878, published at Baltimore, Md.

Baltimore American, issue of May 21st, 1878, published at Baltimore, Md.

Boston Sunday Herald, issue of April 14th, 1878, published at Boston Mass.

The Clipper, issue of February 28th, 1880, published at New York.

Cincinnati Commercial, issues of March 11th, April 1st, and May 5th, 1878, published at Cincinnati, Ohio.

Evening Journal, issue of May 9th, 1878, published at Chicago, Ill.

Cape Ann Advertiser, issue of May 24th, 1878, published at Cape Ann, Mass.

Dayton Democrat, issues of April 28th, and May 11th, 1878, issued at Dayton, Ohio.

Daily News, issue of April 10th, 1878, published at London.

London Daily Telegraph, issues of April 20th and May 22nd, 1878, published at London.

London Times, issues of January 17th and April 20th, published in London.

London Morning Post, issue of April 20th, 1878, published in London.

Evening Transcript, issue of May 23rd, 1878, published at Boston, Mass.

Boston Daily Globe, issue of May 24, 1878, published at Boston, Mass.

Boston Journal, issues of May 23rd, 25th, and 30th, 1878, published at Boston, Mass.

Boston Post, issue of May 24th, 1878, published at Boston, Mass.

Boston Daily Advertiser, issue of May 24th, 1878, published at Boston, Mass.

Frank Leslie's, issue of April 20th, 1878, published at New York.

London Weekly Graphic, issue of March 16th, 1878, published in London.

Lancaster Intelligencer, issue of February 25th, 1878, published at Lancaster, Pa.

New York Mail, issue of April 26th, 1878, published at New York.

Evening Post, issue of May 24th, 1878, published at New York.

The Daily Fredonian, issues of May 27th and June 6th, 1878, published at New Brunswick, New Jersey.

Evening Express, issue of March 20th, 1878, published at New York.

The New York Sun, issues of April 28th and August 29th, 1878, published at New York.

The World, issues of March 26th, April 9th, May 17th, and May 31st, 1878, published at New York.

The Weekly Sun, issue of February 27th, 1878, published in New York.

New York Herald, issues of February 24th, April 24, and April 28th, 1878, published in New York.

The Weekly Witness, issue of May 2nd, 1878, published at New York.

Newark Register, issues of May 3rd, and May 17, 1878, published at Newark, New Jersey.

The Daily Advertiser, issue of May 3rd, 1878, published at Newark, N.J.

Newark Evening Journal, issue of May 3rd, 1878, published at Newark, N.J.

New York Graphic, issues of March 15th, April 18th, June 8th, and August 30th, 1878, published at New York.

The Operator, issues of May 1st, and June 1st, 1878, published at New York.

The Public, issue of May 2nd, 1878, published at New York.

The Sunday Times, issue of April 7th, 1878, published at Philadelphia, Pa.

Pottsville Miners' Weekly Journal, issue of April 12hh, 1878, published at Pottsville, Pa.

Philadelphia Inquirer, issue of April 20th, 1878, published at Philadelphia, Pa.

Philadelphia Times, issue of March 9, 1878, published at Philadelphia, Pa.

Philadelphia Weekly Times, issue of April 27th, ~~XX~~ 1878, published at Philadelphia, Pa.

Illustrated Police News, issue of May 24th, 1878, published at New York.

Philadelphia ~~XXXXXX~~ Press, issue of March 9th, 1878, published at Philadelphia, Pa.

Philadelphia Record, issues of March 9th, and March 21st, 1878, published at Philadelphia, Pa.

Philadelphia Ledger, issue of March 21st, 1878, published at Philadelchia, Pa.

Portsmouth Daily Cronicle, issue of March 12th, 1878, published at Portsmouth, N.H.

The State, issue of April 30th, 1878, published at Richmond, Va.

Rochester Democrat, issue of March 13th, 1878, published at Rochester, N.Y.

San Francisco, Cronicle, issue of March 15, 1878, published at San Francisco, Cal.

St Joseph Daily Herald, issue of May 23rd, 1878, published at St. Joseph, Mo.

Washington Star, issues of April 19th, and May 7th, 1878, published at Washington, D.C., by the Evening Star Publishing Company.

Workshop Receipts (Third Series), page 172, published at London, in the year 1884, by E and F.W. Spon.

Engineering, Vol.27, page 326 et seq., published at London, April, 18, 1879, edited by W.H.Maw and J.Dredge.

Engineering, Vol.27, page 202 et seq., published at London, March 7, 1879, edited by W.H.Maw and J.Dredge.

Comptes Rendus, Vol.85, page 1082 et seq., deposited by Ch.Cros, April 30th, 1877, descriptive of phonographs and their operation.

Scientific American, Vol.37, page 304 et seq., published at New York November 17th, 1877, by Munn & Co.

Scientific American, Vol.39, page 113 et seq., published at New York, August 24th, 1878, by Munn & Co.

Haslock's metal Turning Handbook, published at London, in the year 1882.

Telegraphic Journal, Vol.7, page 33 et seq., published at London, February 1st, 1879, by Houghton & Co.

Telegraphic Journal, Vol.7, page 151 et seq., published at London, May 1st, 1879, by Houghton & Co.

La Nature, issue of May 3rd, 1879, page 349 et seq.

Journal of the Society of Telegraph Engineers and Electricians, Vol.8, page 303 et seq., published at London, April 9, 1879.

The Telephone, the Microphone and the Phonograph, by Count Du Moncel, Chapter on Phonographs, pages 235 to 281 etc., published at New York, 1879, by Harper & Brothers.

Scribner's Monthly, Vol.15, pages 857 et seq., and 899 et seq., published at New York, April 1878, by Scribner & Co,

Popular Science Review, Vol.2, New Series, page 219 et seq., published at London, 1878.

The Speaking Telephone, Talking Phonograph and Other Novelties, by George B.Prescott, Chapter 10, pages 292, to 308 et seq., published at New York, 1878.

Ganot's Elementary Treatise on Physics, pages 241, 242 and 243, published at New York, in the year 1883 by William Wood & Co.

Elementary Ttreatise on Natural Philosophy, by A.Privat-Deschanel, part 3, pages 824 and 815, published at London, in the year 1872, by Blackie & Son.

Vorschule der Experimental physik, pages 263, to 266 et seq., published at Leipzig, in the year 1883, by Duandt and Handel.

L'Architecte, issue of April 27, 1878, published in Paris, France, in 1878.

Lr Monde Illustre, issue of April 6, 1878, published in Paris, France in 1878.

The Universal Engineer, issue of January 17, 1879, Vol.2, page 36 et seq., published in Manchester, Ehgland; edited by R.Z.Craven.

The World's Review of Sciences, Vol.47, pages 590 et seq., published by Abbe Moigno, September - December, 1878.

Les Mondes, issue of December 12, 1878, published in Paris, France.

and also many other printed publications of which this defendant has as yet no knowledge, but which, when he shall have ascertained the same, he prays leave to embody herein by suitable amendment.

The defendant, on information and belief, further says that said Letters Patent No. 341,214 and 341,288 do not disclose or show any invention whatsoever, in view of the state of the art in recording and reproducing speech and other sounds, and in apparatus for recording and reproducing sounds or sonorous vibrations which existed at and long before the said Bell and Taintor and the said Sumner Taintor made any invention of the alleged improvements set forth in said letters patent, and that, in view of the said state of the art, said alleged improvements were not patentable, and involved, if anything, mere mechanical skill.

The defendant further says that he is advised and believes, and therefore alleges, that neither of the specifications attached to and forming part of said Letters Patent No. 341,214 and 341,218 are sufficiently full, clear and exact to enable any one skilled in the art to which the said alleged improvements set forth in said letters patent pertain, to construct and use the alleged improvement which forms the subject matter of said letters patent. On the contrary, the defendant further alleges that the specifications annexed to the said several letters patent are insufficient, incomplete and ambiguous, and that they do not show the method of making and using the said alleged patented improvements in such full, clear, concise and exact terms as are required by the statute in such case made and provided.

This defendant further answering says that the said Letters patent Nos. 341,214 and 341,288, referred to in the said bill of complaint, were irregularly issued, and are null and void and of no

effect in law, for the reason, among others, that each of said letters patent contained both claims for a machine and claims for a process; that the specifications, drawings and claims of said letters patent 341,214 and 341,288, and each of them, are multifarious, as set forth and embrace several distinct and independent alleged inventions, devices and methods which cannot lawfully be embraced or contained in the same letters patent; and the defendant therefor avers, and will show, that, by reason of said multifariousness in each of said letters patent referred to in the bill of complaint, such letters patent are void and of no effect in law.

That the specifications and drawings of each of the said letters patent filed by the said patentees in the Patent Office were, with the purpose of deceiving the public, made to contain less than the whole truth relative to said alleged inventions or discoveries, or more than is necessary to produce the desired effect intended to be produced by the said alleged inventions.

Wherefore, and for the causes aforesaid, this defendant wholly denies the equity of the complainant's bill herein, and all manner of wrongful and unlawful acts wherewith in the said bill of complaint he is charged, and further denies the right of the complainant to the relief, and each and every part thereof, alleged against this defendant in said bill of complaint, and submit that he should not be compelled to make any ~~further~~ other or further answer than that herein contained.

All of which matters and things this defendant is ready and willing to aver, maintain and prove as this Honorable Court shall direct, and said defendant prays the same benefits from this answer as if he had demurred to the said bill where a demurrer

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would have been proper, and pleaded to said bill where a plea would have been proper, and humbly prays to be hence dismissed with his reasonable costs and charges in this behalf most wrongfully sustained.

Edward H. Arnett

Munday Evans & Adcock
Solicitors for Defendant.

Edmund Adcock
Of counsel for Defendant.

UNITED STATES CIRCUIT COURT
NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY	)	
	)	
-vs-	)	IN EQUITY.
	)	
EDWARD H.AMET.	)	
	)	

Affidavit of ARTHUR S.BROWNE.

City of Washington,

District of Columbia, s.s:

ARTHUR S.BROWNE, being duly sworn says: I am thirty-four years old; reside at Washington, D.C., and am a patent solicitor, lawyer and expert. I graduated at Dartmouth College, Hanover, N.H. in 1881. The following year I entered the office of my father, who was a patent solicitor and expert, and in 1886 I established an office of my own. During the last thirteen years I have been actively, continuously and exclusively engaged in the practice of the profession of ~~x~~ soliciting patents, and as incidental thereto, have been continuously engaged in studying inventions and patents, making examinations into the prior arts to determine the novelty and patentability of inventions and the validity and scope

of letters patent, comparing and analysizing patents, and visiting shops and factories for examining machinery and for witnessing the practice of various arts.

I have frequently testified as an expert witness in suits brought for the infringement of patents in the United States Courts.

I am conversant with the art of recording and reproducing sounds, with the appliances and methods employed therein, and with the history of its development from the phonantograph of Leon Scot to the modern graphophone.

I have examined the patents in suit Nos.341,214 and 341,288 and understand the construction and operation of the machines and devices therein described and claimed. I have heretofore testified in infringement suits involving the general subject of talking machines, and the patents in suit.

I have also examined and understand the defendant's machine, marked "Complainant's Exhibit, Defendant's Machine, Reeve Lewis, Notary Public" with the title of this suit.

This machine is not a complete graphophone, as it lacks what is known as the "recorder", or the instrumentalities for making sound records by the process of engraving in a wax-like body which process is that described in patent to Bell & Tainter, in suit, and which is used in every commercial talking-machine of which I have any knowledge.

Defendant's machine is designed solely for reproducing sound records. For this purpose it has a mandrel upon which the ordinary commercial sound record is adapted to be placed, and which is rotated by means of an ordinary clock-work, or spring motor mechanism. The machine is absolutely

designed to be used with, and would be of no use apart from, the ordinary sound record cut in a cylinder of wax-like material, the record being in the form of a groove with sloping walls, as described and claimed in the patent referred to. I have demonstrated that this is true by taking one of the ordinary commercial sound records, composed of wax-like material having the record cut in the form of a spiral groove with sloping walls, and placing it on the mandrel of Defendant's machine. Thereupon, on operating the Defendant's machine, the sound was perfectly reproduced.

The reproducing mechanism of defendant's machine owes its operativeness solely to its use in conjunction with a record made in the form of a groove with sloping walls.

These fine grooves or lines form a spiral on the record cylinder, there being one hundred threads to an inch. The adjacent threads therefore form quite a sharp angle, so that the reproducing point, if swung freely so as to rest on the tablet by gravity, will automatically seek and find its place at the bottom of the groove, and will, without any adjustment whatever, keep in contact with the undulatory record.

The reproducing device of defendant's machine is of this construction. It consists of a reproducing point on one end of a glass tube, the other end of which is loosely mounted on the frame of the machine. The weight of this tube is supplemented by a piece of lead tied to it.

The mounting of the reproducer tube or hollow arm is such that it can swing laterally or in a longitudinal plane. In operation the reproducer is allowed to rest with

its free end carrying the reproducer point on the record cylinder. As the latter is revolved the reproducer swings laterally, being guided solely by the fine groove, and kept in its place by the sloping walls thereof.

The other parts of the machine are simply a diaphragm or sonorous body, in this case a strip of wood in close proximity to the hinged end of the glass tube, and an ordinary pair of hearing tubes. The features of a sound reproducer which I find in defendant's machine are pointed out in patent No.341,214, in suit, and were first described and made known by that patent. I quote from the specification beginning at line 84, page 1:

> "The invention consists fourthly in loosely mounting the reproducing-style so that it can readily be guided by the record. Preferably the reproducing-style, or what may be called the "head" of the reproducing instrument, is mounted on a universal joint, and the style is pressed against the record by the yielding pressure of a spring or weight"

Beginning at line 101, same page, it is stated that:-

> "The reproducing-style, mounted as just explained, is specially adapted for use in connection with a record in the form of a groove with sloping walls, and this combination is specially claimed".

The grooves of the graphophone sound-record are, as I have stated, exceedingly fine and very close together. Their depth averages less than a five-hundredth part of an inch, or slighter than the thickness of a sheet of ordinary tissue paper. It was a novel, and as I regard it, an exceedingly brilliant discovery, that a reproducing point, flexibly mounted, could by means of a groove of such slight depth be perfectly guided and keep its place automatically.

Without the use of this invention the reproducer must be most accurately adjusted, and fed by means which operate with absolute precision to keep constantly in the track of the record. With a reproducer not resting by gravity on the record, but fixed rigidly at a definite level, there can be no compensation for slight irregularities in the record cylinder, and it consequently would sometimes be out of contact therewith, and sometimes press and gouge into it, both of which defects of operation are fatal to good reproduction.

The construction of this part of the patented invention is specifially described on page 4 of the patent beginning at line 33, and ending at line 116. As the construction is simple, and the description full and clear, no additional explanation is needed. The advantages of the construction are also given. I quote the following, beginning at line 68:

> "There exists always a liability to disarrangement in some part of the machine either in the recorder or the support therefor or the recording-tablet or its support, or if there be no disarrangement it would be difficult to insure that the reproducing style should touch the record precisely at the proper point if the reproducer be held rigidly. Difficulties on these accounts are avoided by the loose or flexible mounting of the reproducer, the style automatically adjusting itself to the proper place on the record. It will be seen that the reproducer is mounted on a universal joint, so that it can move in any direction. The movement parallel with the face of the tablet would however, by itself allow the style to follow and adjust itself to the record to a useful extent."

I find the construction of the following claims of this patent in defendant's machine:-

"19-

> The combination, with a reproducing-style, of a mounting therefor, which leaves said style free to move laterally, and thereby adjust itself automatically to a sound-record, substantially as described.

20.

The reproducer loosely mounted on a suitable support so that the reproducing-style is capable of a lateral movement, and may in consequence thereof adjust itself automatically on the record, substantially as described.

21.

The reproducer mounted on a universal joint and held against the record by yielding pressure, substantially as described.

22.

The combination, with a grooved tablet or other body having a sound-record formed therein, of a reproducer having a rubbing-style loosely mounted, so that it is free to move laterally, and thus adjust itself to the groove, substantially as described.

24.

The combination, with a sound-record formed in wax or a wax-like material, of a reproducer having a rubbing style for receiving sonorous vibrations from said record, substantially as described.

36.

The reproducer mounted upon a hollow standard which forms a sound-conveyer, substantially as described.

37. The reproducer mounted on a hinged arm, and provided with a sound-conveyer extending lengthwise of said arm, substantially as described.

38.

The reproducer mounted on a hinged arm, and provided with a sound-conveyer extending lengthwise of said arm, and connected at the hinge with an exterior sound-conveyer, substantially as described."

In claim 19, the word printed "face" is an obvious typographical error for "free".

No explanations, such as experts are usually called upon to make in order to point out infringements, are required in this case, it being evident upon reading these claims that the subject-matter of each is embodied in defendant's machine, and constitutes the means whereby it is enabled to operate.

Patent No.381,288 describes among numerous other improvements, a modification of the construction broadly

described and claimed in the above quoted claims of patent No.341,214. This improvement is described as consisting in "supporting the reproducing style so that it, or at least the end in contact with the record can move sidewise independently of the diaphragm or other device upon which it impresses the vibrations" (page 3, lines 15 - 20).

This improvement is defendant's machine, the reproducer being mounted to move sidewise independently of the diaphragm. This improvement is specified in claim 39 of said patent, which is as follows:

> "A reproducer having a flexible, or flexibly mounted style movable sidewise independently of the diaphragm or device to which the style communicates vibration, substantially as described"

In defendant's machine the style is not flexible, but is "flexibly-mounted" so as to have the described operation.

William L. Browne

Sworn to and subscriber before me this 16th day of January 1896.

Reeve Lewis

Notary Public,

District of Columbia.

UNITED STATES CIRCUIT COURT
NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY)
)
-vs-) IN EQUITY.
)
EDWARD H.AMET.)
)

Affidavit of PHILIP MAURO.

City of Washington,
Diwstrict of Columbia. s.s:

PHILIP MAURO, being duly sworn says: I am of counsel for the Complainant herein. I have actively participated in and am personally cognizant of all the details of the litigation now in progress in which the patents Nos.341,214 and 341,288, known as the "Graphophone Patents" are involved. In this litigation the Edison Phonograph interests are defendants. The manufacture of the machines known as "phonographs" was begun under a license to use, for an agreed royalty, certain broad features of the patents in suit, and it has been shown by testimony that practically all phonographs which have been made and sold up to the present day were so made and sold during the subsistance of the business arrangement whereof the license above referred to

was a feature. Broadly speaking, every talking machine, ever made in this country, or in the world, was made under or in accordance with the patents in suit, or the corresponding foreign patents. The manufacture of Edison Phonographs has wholly ceased since the year 1891, the only talking machines made since that date being graphophones manufactured by complainant.

The business arrangement, to which I have referred, came to an end by reason of the bankruptcy of the complainant's licensee Jesse H.Lippincott (who at that time owned the Edison patents) by his failure to pay royalties, and by other events which, in the judgment of complainant's counsel, operated a forfeiture and termination of the license.

Thereafter, certain persons who had been authorized by said Lippincott to make phonographs, sound records and blanks, embodying features of complainant's inventions, continued to engage in that business, and against these persons complainant began, and is now prosecuting, infringement suits. Complainant attempted to procure, against two of these defendants, preliminary injunctions; but their application was met with a great mass of contracts, agreements, business dealings and arrangements, in consequence of which the said defendants claimed a right to engage in such business, and the applications for preliminary injunctions were denied. Subsequently this whole contract situation was raised by a plea in American Graphophone Co. -vs- Edison Phonograph Works, and upon a record of printed pages was argued before his Honor, Judge Acheson, who decided that the contract between complainant and said Lippincott was purely personal and gave

no rights to the defendant (68 F.R. page 451).

The suits referred to involved the broad features of making sound records by engraving in wax or wax-like bodies, and the defendants in said suits have, by their answers, denied the novelty of such claims, the feature of cutting records in wax being the operation of every commercial talking-machine made up to this time, and being claimed by Mr. Edison as his invention. That claim has not yet been judicially passed upon.

The present defendant does not make phonographs, or devices for making sound records, nor does he manufacture sound records, or blanks therefor, which are the matters in controversy in the litigation referred to. He makes a cheap reproducing apparatus, and sells it with the intention that purchasers thereof shall buy the sound records sold by complainant and its licensees and dealers, and by means thereof be able to reproduce such musical and other sound records.

The essential features and principles of defendant's reproducing apparatus are inventions covered by special claims of the patents in suit, which inventions have been in all graphophones from the very first, and which have been recognized by Mr. Edison and every one else.

The sound records put on the market are cut in a wax-like cylindrical tablet in the form of a groove with sloping walls. The reproducer in patent No.341,214 is carried at the end of a tube and is connected with the frame by a "soft, flexible, vulcanized rubber tubing" (specification page 4, line 5).

The specification thus states the object of this improvement (page 4,line 57):

> "The reproducer when so placed is mounted upon a hollow standard composed of the tubes or tubing 31, 32, 33 and 19, and in consequence of the flexibility of the rubber tubing 32 it is free to follow the record. No special care is necessary to insure its adjustment, for if the reproducer K be allowed to rest against the record with the style upon the engraved line, the style will of itself gravitate to the bottom of the groove."

The following paragraph also deals with the advantages of providing the reproducer with a loose or flexible mounting. Not only does the reproducer rest with its point pressing by gravity on the record, thus maintaining contact irrespective of any inequalities in the recording surface, but the groove in the record is thus enabled to guide the reproducer; -in other words, the latter automatically "tracks the record".

This is the essential feature of the operation of defendant's machine. The reproducer is a point carried on the end of a glass tube, which also serves as a sound passage. This tube is hinged or pivoted so that it can swing in a horizontal plane, and the engagement of the reproducer point in the groove of the record is the sole means employed for guiding the reproducer. The reproducer arm or tube touches at its rear end a sounder or diaphragm, from the vicinity of which the ear tubes lead. The reproducer rests by gravity on the tablet, and is therefore free to rise and fall with the same.

These features of complainant's invention are pointed out and claimed in claims 19, 20, 21, 22, 24, 36, 37 and 38 . It will suffice here to quote claim 20:

"The reproducer loosely mounted on a suitable support, so that the reproducing style is capable of lateral movement and may in consequence thereof adjust itself automatically on the record, substantially as described".

Inasmuch as the diaphragm or vibrating device is stationary in defendant's machine the style is a "flexibly mounted style movable sidewise independently of the diaphragm or device to which the style communicates vibration" as pointed out in claim 39 of the second patent No.341,288.

Philip Laurd

Sworn to and subscriber before me this 16th day of January 1896.

Dave Lewis

Notary Public,

District of Columbia.

UNITED STATES CIRCUIT COURT
NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY)
)
-vs-)
)
EDWARD H.AMET.)

Affidavit of EDWARD D.EASTON.

City of Washington,

District of Columbia, s.s:

EDWARD D.EASTON, being duly sworn, deposes and says: I am a resident of Washington,D.C. and am President of the American Graphophone Company, complainant herein.

I have been familiar with the construction and use of instruments known as graphophones and phonographs ever since they were first put upon the market, have used them daily in my work since that time, and for many years my attention has been devoted to the business of manufacturing and disposing of such instruments. This business has taken me to many different parts of the country, and brought me into contact with most of the persons engaged in a similar business. I am conversant with every type of machine of this kind that has ever been put upon the market.

Although differing in name, phonographs and graphophones are alike in all essential respects. The prospectus

issued by the North American Phonograph Co. and Jesse H. Lippincott, who marketed both machines, printed for private circulation, a copy of which is in my possession, thus stated the fundamental characteristics of both these machines:

> "The foundation principle consists in the cutting of minute impressions upon the surface of a small wax cylinder by means of a tiny cutting instrument actuated by sound-waves, and in these same minute impressions or punctures afterwards setting in vibration a small diaphragm attached to a delicate needle-point" etc.

This operation of "cutting" in a wax cylinder is the mode of operation of every talking-machine that has ever been put upon the market, to my knowledge, and the introduction of such machines, whether known as phonographs or graphophones, was begun and, for a long time and everywhere in this country, continued, under the patents granted to Bell & Tainter, May 4th, 1886, now involved in this suit. Since the grant of these patents, although the machines have been greatly improved in matters of detail, the essential principles have not been changed up to the present time.

The arrangement between Lippincott, the sole licensee under the Graphophone Co. and the North American Phonograph Co. organized in 1888 by said Lippincott, and which owned the Edison patents, terminated in 1891. Since that date no phonographs have been manufactured, the sole talking machine, which is everywhere sold and in use, and which is marketed by complainant's agents and dealers all over the United States, being the graphophone. These machines are now being made and sold at the rate of many thousand per annum, and complainant has great difficulty, with a large

and well equipped factory in supplying the demand. Complainants have invested over half a million dollars in this enterprise.

Every one of the machines made and sold by complainant employs the feature of a reproducer which rests by gravity on the tablet, and also the feature of a reproducer which can swing laterally and thus automatically follow the groove of the record. I have examined the machine made and sold by defendant. The features I have just described constitute its essential feature of construction and operation. Apart from the clock-work mechanism (which is not part of the talking machine proper) and the diaphragm or sounder, the entire operative mechanism consists of a reproducer flexibly mounted so that it can swing laterally and track the record, and having a point which rests by gravity on the tablet.

This infringing machine has but recently appeared upon the market. It has no recording mechanism, andis useless except to reproduce from the commercial records made and sold by complainant. It thus takes the place of a graphophone, and every one sold is a direct injury to complainant and its authorized agents and dealers.

The cheapest form of graphophone put on the market sells for ~~$25~~ 40 retail. The defendant's machine is, I understand, sold for $6.

I am ~~willing~~ able to state of my own knowledge, which dates back to the beginning of this art, that no commercial talking machines existed or were known prior to the date of the patents sued on. I am familiar with the Edison tin-foil

phonograph of 1877. This was not a practical machine, as is well known. It did not have the features above referred to or either of them. In fact it would be impossible to use either of these features with a record impressed on pliable material such as tin foil.

I am also able to state of my own knowledge that complainants rights in respect of the inventions appropriated by defendant, as specified above, have everywhere, and at all times during the ten years of the patents, been acquiesced in and respected.

Edward D. Easton

Sworn to and subscribed before me this 16th day of 1896.

Peter Lewis

Notary Public,
District of Columbia.

IN THE UNITED STATES CIRCUIT COURT,

FOR THE NORTHERN DISTRICT OF ILLINOIS.

NORTHERN DIVISION.

AMERICAN GRAPHOPHONE COMPANY	)	
	)	In Chancery.
vs.	)	Genl. No. 23986
	)	Term No. 719.
EDWARD H. AMET	)	

Affivadit of LEON F. DOUGLASS.

State of Illinois, :
:ss.
County of Cook. ::

LEON F. DOUGLASS, being duly sworn, says: I am Vice-President of the Chicago Talking Machine Company, and have been for three years engaged in the business of selling graphophones, sound records, blanks, and other devices pertaining to the recording and reproducing of sounds. The Company of which I am Vice-President has invested large capital in this business, employs numerous assistants, and has extensive sale rooms and exhibition parlors in the City of Chicago. The rental of these establishments aggregates more than ten thousand dollars annually, and the expenses of the business are very heavy. Most of the devices in which the company deals are made by the American Graphophone Company, complainant herein. My acquaintance with this business is such that

I necessarily have knowledge of all talking machines and similar appliances on the market, and to my knowledge nearly all talking machines now made and sold, and about all that have been manufactured in this country for more than four years past, are made by the Compdainant--excepting the defendant's machine hereinafter referred to. Complainant's machines are sold everywhere. I have sold in the past year upwards of three hundred graphophones, and upwards of ten thousandsound records and blank cylinders.

Defendant's machine is made by the Defendant, Edward H. Amet, of Waukegan, Illinois, whose name appears thereon. The machine offered as an exhibit herein and marked "Complainant's Exhibit Defendant's Machine, Reeve Lewis, Notary Public", was purchased, by instructions, by E. A. Parsons. The price paid for it was six dollars. Defendant has just entered upon their manufacture, andI first heard of their appearance on the market about January 10th, 1896. Defendant is, to my knowledge, irresponsible financially and without resources or capital. He has no sales-room, or fixed place of business, except at home.

His infringement, if allowed to continue, will seriously ~~and irreparably~~ damage the business of my company, andit would be impossible in my opinion to recover any damages from him at final hearing.

Eva. T. Taylor

Sworn to and subscribed before me this 23rd day of January, 1896.

J. Everett Brown
Notary Public.

United States Circuit Court,

Northern District of Illinois.

American Graphophone Company,		
		In Equity.
vs	-|-	
		Genl.No.23,986.
Edward H.Amet.		Term No. 719.

Affidavit of Edward H.Amet:

State of Illinois, \|
-\|-ss.
County of Cook. \|

Edward H.Amet, the defendant, being duly sworn deposes and says: I have read the affidavit of Leon F.Douglass. It is not true that I am "irresponsible financially and without resources or capital";on the contrary I am financially responsible and have property to a considerable amount, aside from my inventions which I consider of great value. For a single one of my inventions I was offered some time ago five thousand dollars which I refused, though the application on it had just been filed and had not yet been examined by the Patent Office.

I am in no sense embarassed financially, and with the exception of a few small running accounts owe nothing. My credit is and always has been good. Mr.Douglass'own Company has frequently given me credit for considerable amounts for various supplies it has furnished to me. A few days prior to the date of Mr.Douglass' affidavit I went to him to pay a small balance of some one hundred odd dollars, and, for some reason I could not understand at the time, Mr.Douglass almost insisted upon my deferring payment of the account. I however paid it.

I have been informed and believe it to be true, that the complainant is a corporation which was organized upon the basis of

the ownership of certain patents which constitute practically its sole capital. And that though the capital stock of said Company was made large, the Company has in fact little if any property other than its patents, and that it is irresponsible and damages to any considerable amount could not be recovered from it.

Though I have recently put my talking machine upon the market a very large demand for it has already arisen, and I have a very valuable business in it, and one which I am sure has a very great future. By the granting of a preliminary injunction this business would be destroyed and I should suffer great and irreparable injury. If the Complainant's patents on graphophones can be valued, as stated substantially in Mr. Easton's affidavit, at $500,000,00, my patents and inventions on my talking machine, in view of the fact that I can make my machine at many times less cost, ought to be valued at a much greater sum. And in this connection I desire to state the fact, that one of my three applications for patents on my talking machine has already been officially allowed by the Patent Office, without the citation of a single reference. And in the other two applications my attorneys advise me that I shall also secure very valuable claims; and I have a great number of valuable inventions relating to this subject for which I have not yet filed application for patents.

Edward H. Arnet.

Subscribed and sworn to before me this 31st day of January, A.D. 1896.

H. W. Munday

Notary Public

UNITED STATES CIRCUIT COURT
Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY)
)
-vs-) IN EQUITY.
)
E.H.AMET.)

ADDITIONAL AFFIDAVIT OF E.D.EASTON.

Washington,District of Columbia - s.s:

Edward D.Easton, being duly sworn says: I have already given an affidavit herein.

I am informed that the defendant has made affidavit affirming his own responsibility and credit, and stating that the complainant company is irresponsible and that its sole capital is its patents.

To my knowledge, defendant is financially irresponsible, and with very limited, if any, credit.

A few facts touching complainant's business operations, investment and equipment will show that defendant's statements are without foundation, and utterly untrue.

Besides its patents, which are of great value and for which complainant paid a high price, upwards of three hundred thousand dollars in cash have been paid, as working capital, and the earnings of the company, to a large amount, have been applied to plant, equipment and extension of business. Complainant's factory contains over two hundred

thousand dollars worth of machinery, tools, etc. which are constantly in use in the manufacture of graphophones and supplies. It's pay roll is upwards of one thousand dollars per week. Its cash business is over twenty thousand dollars per month, it owns exhibition and other graphophones, appliances etc. worth over fifty thousand dollars. It has good book accounts to the amount of over forty thousand dollars, and its credit rating by the commercial agencies is the highest. Against all these assets and resources it has no debts, except current bills.

E D Easton

Sworn to and subscriber before me this 1st day of February, 1896.

Reeve Lewis

Notary Public,

District of Columbia.

UNITED STATES CIRCUIT COURT
NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY,)
)
-vs-) In Equity.
)
EDWARD H. AMET.)

AFFIDAVIT OF CHARLES SUMNER TAINTER.

District of Columbia, ss:

CHARLES SUMNER TAINTER, being duly sworn says: I am of lawful age, and reside in Washington, D. C. I am one of the grantees of patent No. 341,214 to Bell and Tainter, and the grantee of patent No. 341,288.

I am very familiar with the construction and operation of the original Edison tin-foil or indenting phonograph, both from actual use and study of that apparatus, and from examination of the patents and publications in which it is described. Dr. Bell and myself began our experimental work in the art of recording and reproducing sounds by studying the causes of failure of the phonograph. Previously to that time I had made a special study of the laws and phenomena of light and sound vibrations.

I have been familiar with telegraphic, electrical, and philosophical apparatus generally for a period of more than twenty-three years, and have designed, made and used many pieces of apparatus of that nature. About 1871-72 I was

This section from Tainter papers. - U.S. Nat. Mus. of Hist & Tech.

employed by Charles Williams, Jr., of Boston, Massachusetts, in the manufacture of telegraphic and electrical instruments, and afterwards for a period of four or five years was with Messrs. Alvan Clark & Sons, at Cambridgeport, Massachusetts, manufacturers of astronomical, mathematical, and electrical apparatus. In 1874 I was commissioned by the United States Government a member of the expedition to observe the transit of Venus, and on that mission visited the observing stations in the Southern Hemisphere, having special care of the instruments and their mounting, etc. About 1878 I was for some time in business for myself as a philosophical instrument maker. Since that time I have specially devoted myself to the study and development of apparatus for transmitting, recording, and reproducing sound.

In 1879 I became associated with Prof. A. Graham Bell in the development of acoustical apparatus, and the recording and reproduction of sound received much attention. We considered the art in its infancy and thought that it had a great future of practical utility if developed in the right direction. We realized, however, that its practical development involved protracted labor and research, and also the expenditure of considerable capital. During the years 1879 and 1880 we devoted considerable time to the problem of transmitting sounds to a distance by means of radiant energy, and developed the instrument known as the "photophone".

In the spring of 1881 the Volta Laboratory Association was organized by Alexander Graham Bell, Dr. Chichester A. Bell and myself, for the purpose of developing practical methods of recording and reproducing sounds, and working on

problems and inventions of a kindred nature, Mr. Bell having devoted to that use the 50000 francs Volta prize awarded him by the French Academy for his invention of the speaking telephone. We were thoroughly equipped for carrying on this work, and devoted ourselves to it assiduously, it being our continuous and constant occupation for about four years. At that time there were no known means or methods of making and reproducing accurately records of articulate speech and other sounds, and the unsuccessful efforts of Edison and others, rather discouraged than aided attempts in that direction, by revealing the great difficulties with which the undertaking was beset.

The principal problem we undertook to solve, and to which our efforts were directed, was the production in hard resisting material, of a record which would be accurate, which could be made with facility by unskilled users, which could be handled and transported, and which could be used for immediate reproduction. This result, with all the minute details of apparatus necessary to accomplish it, was worked out, after much experiment and inventive effort, and the expenditure of a great amount of time and money. The invention and its accessories are set forth fully in the two patents involved in this suit (No. 341,214 and 341,288) and that invention is at the foundation of the existing art of recording and reproducing sounds.

The invention was at once and universally recognized as novel and of great scientific and public interest. Capitalists quickly came forward and, after investigation, paid a large sum for the U.S. patents. The corresponding foreign patents were sold for half a million dollars paid in cash.

Between the graphophonic method of making a record by cutting or gouging out a solid material, i.e. actually removing the material in which the record is made, and the Edison method of impressing or bending a pliable material such as tin-foil or soft paper saturated with paraffine, there is a wide and fundamental difference. By the indenting method it is impossible to make an accurate record, because the style when pressing at one point depresses the material all around it, this distorting the record immediately behind it. Moreover, the tin-foil did not follow accurately the upward movements of the stylus. There were other causes of failure which it is not necessary for me to mention. The making of the record depends upon the extreme plasticity or softness of the material, and consequently the reproducing style, however light its pressure, tends to smooth out the undulations of the record, which as is well known are microscopical in their minuteness.

The tin-foil sheet could not, of course, be taken off the machine and handled without impairing the record. It was both inaccurate to the degree of complete utility, and essentially ephemeral and perishable

One great difficulty with the early phonograph was to keep the reproducing style in the line of the record, and to keep it in constant contact therewith. This problem engaged our attention and was the subject of much experiment before its complete solution was found. Inasmuch as a displacement of the reproducer point of less than the thousandths part of an inch radially of the cylindrical record, or a very slight deviation axially, would be sufficient absolutely to prevent reproduction, it will be seen

that the difficulty was one of a very serious nature. Even with very delicate adjusting devices the difficulty could not be overcome, for the slightest irregularity of the recording surface, or of the movement of the record, would render a readjustment necessary. In the hands of ordinary users the necessity of making delicate adjustments would be, as we fully realized, a serious drawback. In the old tin-foil records the thread was relatively very coarse, and the difficulties of the problem increased with the increased fineness of the thread.

It will be observed that there are two branches to this difficulty, first, the lateral displacement of the reproducer, second, its displacement with reference to the surface of the undulatory record. The first difficulty we overcame by swivelling the reproducing instrument so that it was perfectly free to vibrate laterally. This construction realized a perfect operation carrying out practically the discovery that the reproducer point, would engage a record cut in solid material in the form of a groove, and that a groove so made, though of excessively small depth, would hold the point and guide the reproducing instrument as a whole. This improvement was certainly new at the time we made it, and in confirmation of that fact, it is only necessary to point out that theretofore no sound records were known which were cut or engraved in the form of a groove in solid material. This improvement has been used in all graphophones.

The early Edison phonograph made according to the patents taken out by him prior to our patents did not have this feature, or anything corresponding to it. The reproduc-

ing style was perfectly rigid, so much so that if the indented line on the tin-foil did not exactly coincide with it, it would plough a new track for itself. This I know to an absolute certainty from frequent and repeated use of the phonograph.

Furthermore, the phonograph had adjusting screws for adjusting the reproducer laterally, and means for clamping it rigidly when the adjustment was found. In the course of reproducing a record frequent trials for adjustment were necessary. With a record in wax this construction would be absolutely inoperative. When records are made at one temperature and reproduced at another, there is an expansion or contraction of the record, drawing the threads closer together, or spreading them. In such case, though the initial adjustment were correct, the point would soon get out of the groove.

The statement made by Mr. Curtis in his affidavit herein that there never was the slightest difficulty with the phonograph in this respect satisfies me that he never witnessed the operation of an Edison phonograph of the type made before our patents.

The second difficulty was overcome by arranging the reproducing instrument, that is the arm or support carrying the rubbing point at its end, so that the point rests on the tablet. Thus a uniform and constant contact is maintained between the point and the record. It should be understood that, for the purpose of receiving the impressions of the sound vibrations the support of the reproducing instrument must be to all intents and purposes <u>rigid.</u> The inertia or weight of the reproducer as a whole is sufficient to furnish

this property of rigidity, so as to receive the impression of, instead of yielding to, the vibrations imparted from the record. Thus to the sound record the vibratory part of the reproducer is rigidly held to its work by the weight of the arm, while to all irregularities of the recording surface the reproducer is absolutely yielding and self-adjustable.

It requires little explanation to show that the interposition of the spring between the style and diaphragm, as referred to in Mr. Curtis' affidavit, is for altogether a different purpose, and has altogether a different effect. Mr. Edison proposed to use such a spring to absorb partially the false vibrations and diminish their effect on the diaphragm. This is wholly foreign to the invention under discussion. The reproducing instrument, resting freely by gravity on the record tablet, realizes its most efficient operation when used with a record in the form of a groove with sloping walls, as pointed out and claimed in the patent No. 341,214.

As the result of these two novel features of construction we have a reproducer which requires no adjustment whatever. It finds its own place on the record and keeps it. Such construction was certainly not known prior to the date of our invention. I have examined defendant's machine, and understand perfectly its construction and operation. The essential and vital features of its construction are the two improvements which I have explained, and which are pointed out and claimed in patent No. 341,214. It has a self-sustaining reproducer mounted on a universal joint, resting by gravity on the tablet, and fed along solely by the engagement

of the reproducer point in the groove of the record. In these essential features there is no departure from the improvements explained, the subject-matter of claims 19, 20, 21, 23, 24, 36, 37, 38 of patent No. 341,214, being bodily introduced into defendant's machine.

I do not overlook the fact that defendants machine employs no feed-screw; but these improvements do not embrace or require, and the claims covering them do not refer to, a feed-screw. As the improvements are embodied in actual machines made under the patent, it has been found convenient to use a short reproducing arm, capable of oscillating through a small arc, and to swivel it on a movable support, but whether on a stationary support, or on a movable support, the result is precisely the same, the record feeding the reproducer bodily along. I have frequently caused the reproducing arm to be fed the entire length of a record with the pivot point of the arm stationary, but deem the construction embodied in the commercial machines more practical and satisfactory. It will be observed, that the Amet machine must be kept on a level surface, and that even then the reproducer-arm has a tendency to slide around until its point is firmly engaged in the groove.

I have read with care the explanation given by Mr. Curtis in his affidavit of the construction and operation of the Amet machine and have also read the affidavit of Mr. Amet. These affidavits were evidently prepared by a person unacquainted with well understood acoustical laws and phenomena. Mr. Curtis and Mr. Amet think that the Amet machine embodies or operates upon a new principle, or a principle different from that of the graphophone. This principle he refers to as the "molecular vibration" of a solid body,

distinguishing it from the bodily vibration of the diaphragm of a graphophone.

It will be observed that the improvements which Mr. Amet has appropriated from the patents in suit relate to keeping the reproducing instrument in constant contact with the record, and with uniform pressure. That his machine has a reproducing instrument embodying precisely these improvements, and obtaining precisely the results for which they were designed, is a fact, whether the actual reproduction of sound is accomplished by him on the old familiar principles, or on some new and unique principle.

The principle, however, of sound reproduction in the Amet machine, is that familiar to all physicists, and applied in <u>all</u> sound reproducers. The medium through which sound is transmitted to the drum of the ear is the atmosphere, and the hearing and distinguishing of sounds is dependent upon the transmission through the air, between the sonorous or resonant body and the ear, of waves similar in form to the sounds originating them. To produce sounds, therefore, it is necessary to have a resonant body capable of setting into motion a sufficient body of air to insure the transmission of the desired sound to the ear of the listener. If Amet's machine lacked such resonant body, it would not talk. This vibrating part, is, in most sound-reproducing instruments, in the form of a disk, that being a convenient and the most practical shape, and is called a "diaphragm"; but it is very common in the art to employ sounders of various shapes, and of many different materials and if, for any reason, one does not care to use a disk, he has a large assortment of devices to choose from, the experiments of physicists having

long ago thoroughly explored the properties of sonorous bodies. The phenomenon termed by Mr. Amet "molecular vibration", is not by any means a new discovery. On the contrary it is at the basis of all transmission of sound, and the theory is fully explained in all text books on the subject. It has long been known that sound waves or pulses propagate themselves through solid, liquid, and gaseous bodies, by the vibration of the particles or molecules of which such bodies are composed. The rates of travel of these pulses or waves through nearly all substances have been determined, and are known to be a function of the density and elasticity of the body. When it is desired to transmit the pulse or wave from a solid body to the atmosphere, in order that it may reach the ear, it is necessary to set a relatively large body of air into vibration, to insure audibility and distinctness. Hence the use of sounders or diaphragms in stringed musical instruments. Such sounders may be rigid, like the sounding board of a piano or violin, or flexible like the diaphragm of a banjo, but whether more or less flexible the mode of operation is precisely the same. For example, in Amet's machine the vibration of the glass rod or tube sets a small volume of air into vibration, and the sound proceeding from it is faint; but to the extent that it does set up atmospheric sound vibrations, it does so precisely in the same way, and in obedience to the same laws, as in the case of the glass diaphragm or sounder of the graphophone. Hence, to attain sufficient loudness, Amet employs a diaphragm or sounder of wood, and the fact that he calls it an "amplifier", does not change its function, or the principle of its operation.

In respect of the diaphragm, sounder, or amplifier, there is in the graphophone, no new principle, we having simply applied, in the way found most convenient and efficient, the familiar properties of sonorous bodies. Mr. Amet has done precisely the same thing.

I have already stated that the original Edison phonograph was a total failure, and based upon a hopelessly inoperative principle. This was fully understood, and best of all by those best acquainted with, and most interested in the Edison invention. His failure brought the development of the art to an absolute standstill. His last patent (prior to the issue of our patent) was taken out in 1880. In fact, in the eight years prior to our patent, there were but five patents issued in the United States relating to the recording and reproducing of sounds. In eight years following the issue of our patents about two hundred patents for improvements in this art were granted. I have examined these patents, and have made a study of the development and literature of this art. These patents are classified in the Patent Office under the title "Graphophones". There is no class of "phonographs", no one having attempted to improve, or having received a patent for improving the indenting method since 1880.

Among those who early became interested in the graphophone, were persons who had been interested in the original Edison Speaking Phonograph Company, and had lost money through Edison's failure to make a practical talking machine. The original Edison invention had been patented in England, Canada, and elsewhere before the date of this U.S. patent, and it was well known that he had erased and

disclaimed his phonograph invention from his English patent, as worthless, and in order to save other improvements covered by the same patent, and that his invention was public property in this country, and could be used by anyone who cared to use it (which nobody did) long before the lapse of the term for which it was granted. This was a matter into which I and my associates made special inquiry, and regarding which we fully informed ourselves many years ago.

(Sgd.) Charles Sumner Tainter.

Sworn to and subscribed before me this 14th day of February 1896.

Reeve Lewis,

Notary Public.

(Seal)

United States Circuit Court,

Northern District of Illinois.

American Graphophone Company.		In Equity.
vs	-I-	Genl.No. 23,986. Term No. 719.
Edward H.Amet.		

Affidavit of Walter S.Gray.

State of Illinois, }
County of Cook. } ss.

Walter S.Gray, of lawful age, residing at Chicago, Illinois, being duly sworn deposes and says:

I am a dealer in talking machines and familiar with all kinds of them which are on the market.

I have examined and understand the Bell and Tainter patent No.341,214, and especially claims 19, 20, 21, 22, 36, 37 and 38, thereof: and also the Tainter patent No.341,288 and especially claim 39 thereof. I am also perfectly familiar with the talking machine built by E.H.Amet, the defendant, in which a pivoted glass tubular rod is caused to ride over the record by the groove in the record itself and to produce thus the sounds recorded. I have carefully considered the Amet machine with the claims above enumerated and am of the opinion that it does not contain the subject matter of any or either of said claims; that the Amet machine has no diaphragm and no stylus and no feed screw, and none of the elements of claims 19, 20, 21, 22, 36, 37 and 38 of the Bell and Tainter patent and none of the elements of claim 39 of the Tainter patent.

That the wax cylinder record used by Amet is one sold openly on the market by the complainant for use in talking machines, and that I have sold thousands of such on the open market.

Walter S. Gray

United States Circuit Court,

Northern District of Illinois.

American Graphophone Company,	In Equity.
vs	Genl.No.23,986.
Edward H.Amet.	Term No. 719.

Affidavit of Edward H.Amet.

State of Illinois, }
-ss.
County of Cook. }

Edward H.Amet, of lawful age, being first duly sworn deposes as follows:

I am the defendant. I am by occupation an inventor and a practical electrical and mechanical engineer. I am very familiar with the talking machine and the art connected therewith from the original invention by Thomas A.Edison, called the phonograph, down through all of the inventions and so called improvements including the device styled the graphophone. Very little in the way of actual invention has been done in relation to the talking machine since Edison turned his attention to something else. The machine in fact remains practically the same as Edison left it. His invention or discovery may be summed up thus: He found that a diaphragm or thin flexible plate which could be set into bodily to and fro motion by sound waves in the air, could by means of a point connected thereto, be made to indent a moving tablet or cyl-

inder with a yielding surface as of wax, or tin foil and thus produce a shape or record which when the point was moved over it again would set the diaphragm again into to-and -fro bodily motion of identical character and reproduce thus in the air the same sound waves. The essential parts of the mechanism which he employed to embody this ingenious and complex idea were, (1) a diaphragm or thin flat flexible plate capable of being set into a bodily to-and-fro movement like a drum head moves in response to sound waves in the air; (2)a stylus or point connected to and moving with the diaphragm; (3) a cylinder or tablet to receive the record; (4) mechanism to revolve the cylinder; (5) a feed screw to feed the cylinder along, or if preferred to feed the diaphragm and its connected stylus along, so that in either case the record on the tablet or cylinder would be in a long spiral line. Such a mechanism will make a sound record and then reproduce the sounds recorded perfectly.

The principle of this machine is the using of the diaphragm with its bodily to-and-fro movement to record the sound waves in the air and to give back again from the diaphragm the sound waves to the air. And such a to-and-fro bodily moving diaphragm with a connected stylus has been an element of every talking machine ever built by any one until I was fortunate enough to discover an entirely new principle.

Some time since I was led to enter upon an extensive course of experiments concerning the action and effects of sound waves under various circumstances and conditions, in gas, liquids, solids and substances of various kinds, and concerning the various sorts of vibrations. As a result I gathered together a large number of

curious and unexpected facts, some of which I am not yet able to explain to my own satisfaction, and which I believe will yet have a great future influence on the construction of many of the familiar musical instruments. There is indeed a most wonderful concordance and analogy between the various modes of motion known roughly to us as electricity, light, heat, and sound, all being as I faintly guess and dimly perceive, compelled to obey one single set of laws. But I cannot be expected to be permitted to detail here any of these curious facts excepting those which have immediate bearing. Among other things I found that a diaphragm is wholly unnecessary as an element of the talking machine. By not taking any thing for granted until I tried it for myself I found that if one speaks not necessarily at but only in the presence of a homogenous body, say like a metal ball or a cube of glass, no matter of what size, every part of the body is set into molecular vibration of an amplitude relatively corresponding to the loudness of the sound and of a rapidity of repetition relatively corresponding to the pitch of the sound. So that if a wax tablet be moved in contact with any part of such a body it will make a record of the sound, which may be used to set the body again into similar vibration. And more wonderful still, I have found that when such a body is set into such molecular vibration it will give off to the air, or to any conductor of sound, and in every direction, sound waves of precisely the identical pitch and vibration the very words spoken. If this be true - and I have demonstrated that it is so - it isquite plain that neither the diaphragm nor its attached stylus is at all essential to the talking machine. To make the conception clear imagine a globe of solid glass of any size held in contact with a moving tablet say of wax, and sound waves projected

from any direction against the glass globe. The matter in the globe will it may be imagined at once begin to vibrate, giving off motion in direct response in every direction, and the wax will it may be imagined be marked correspondingly. Now if the globe be moved again over this line the marks will it may be imagined set up the same molecular vibration and the globe will give off again in every direction the sounds it had received. This is my discovery in a nut shell. It seems to me to operate upon a wholly different principle from Edison's to-and-fro moving diaphragm and its operating stylus. Edison depends upon bodily to-and-fro movement in a siggle direction. I depend on molecular or internal vibration and in every direction.

When I came to apply this principle and simple idea to the actual construction of a talking machine however there seemed to rise up a thousand difficulties in every direction. How could I hold the glass in place without destroying or damping its molecular vibrations? How collect and take away to the ear the sound? How amplify it? How could I attach the cutting instrument to the glass? This last named difficulty was a poser. But as I already had sound records cut with a sapphire point, which records can be bought in the market ready made, I got around this trouble by shaping a part of the glass molecular vibrator to the same shape as the sapphire, namely a little hemisphere, which by infinite trials I found a way of doing quite simple. You only have to melt a portion of the glass and draw it out in a thread, and then melt this end when of its own accord it will draw back on itself in a perfect hemisphere for the same reason that water forms rain drops. This elongation of a part of the glass and giving it the form of a half ball, will be called I suppose by some a "stylus",

as it is the part which actually rubs against the record and in this respect corresponds to the stylus of Edison's machine. But I protest there is actually no other similarity between the two devices than this. I choose rather to call it the rubbing point. This rubbing point should be, and is, made homogenous, and in one and the same piece of glass with the vibrator, so that its molecular vibration will be that of the whole entire piece. The difficulty of holding the molecular vibrator in its place I got over by making the whole piece of glass in the form of a solid or hollow rod. The shape makes no practical difference. And I found by experiment curiously enough that as far as damping the vibration is concerned there was no difficulty about that, as the vibrations being internal or molecular instead of bodily, such a rod could be held in the hand without appreciable effect on its sound producing qualities.

I found that such a vibrator would work perfectly without any thing like a diaphragm in connection with it, and that the sound waves emenating in all directions from it could be taken up by the air, or by any substance capable of transmitting sound, and carried to the ear. Thus it can be carried a long distance through the human body; it can be carried through an apple; through a glass of water; or through a piece of wood or a piece of leather. Indeed there are few substances which will not to a greater or less degree pick up and transmit this molecular form of vibration and deliver it in an audible and articulate form.

The two pieces of wood on my little machine with a bit of rubber tube clamped between them is not intended as a diaphragm, and does not act as such in any sense. This contrivance is only

an amplifier, and takes the place in my machine which is filled by the great tin horn sometimes used with talking machines, to throw the sound out into the room. I find that almost any porous or cellular structure such as a piece of wood and even to some degree a wad of cotton wool, will act as an amplifier to molecular vibrations on the same principle that a tuning fork will sing when set on a book or table.

It does not make any difference whether the molecular vibrator is made hollow or solid. I have used a glass tube simply because the material is cheaper and easire to get in this form than a solid rod, and fits over the pivot peg. It is a mistake to suppose that the hole in the glass is what the sound goes through. It goes along the solid glass better than through the air. The tubular form is also the strongest form and less likely to break when dropped accidentally.

I have examined the patents sued on and especially with reference to the subject matter of claims 19, 20, 22, 24, 36, 37 and 38 of the Bell and Taintor patent of 1886, No. 341, 214, and claim 39 of the subsequent Taintor patent of 1886, No. 341, 288. And I understand the alleged inventions of said claims. These machines of Bell and Taintor employ a feed screw for positively feeding the moving tablet across the line of contact of the stylus with the record in imitation of Edison, and the record is made in the form of a spiral groove in the wax. Of course any mechanic would be able to predict from his general knowledge of lathe work the spiral thread in the tablet will not correspond at all points in tuning or pitch exactly with the tuning and pitch of the feed-screw or master-screw, as it might be termed. Any one who has done

fine work on a lathe will know that this descrepancy is liable to occur. In making the record the apparatus works like a screw cutting lathe which has a master-screw feed. In reproducing, the stylus is carried along by the screw in an absolute manner and theoretically should follow in exactly the same spiral line after it is once inserted in the groove. But as this spiral groove itself, as we have seen, is not always true in correspondence with the master screw, some provision must be made to compensate for the disagreement between the groove of the record with the groove of the master screw. And the object of the Bell and Taintor invention of claims 19, 20, 21, 22, is a device for compensating this disagreement. And the device consists in giving the stylus a freedom to move laterally to the slight extent necessary to compensate for a variation which at times may reach one two hundredths of an inch or more. This lateral freedom is given by the Bell and Taintor by means of a short section of rubber tube which makes a movable joint.

In the Edison machine, as originally built, and also in many modern forms of it, this compensation (which is always required to permit the stylus to track) is found sometimes in the spring of the metal of which the stylus arm is made, and sometimes in the looseness of the joints and pivotal connections. In all kinds of journals and bearings, movable joints or pivotal connections (except one particular kind) there is provided a certain amount of looseness called "end shake" and "side shake". The amount of side shake at its hinge or pivot necessary to permit a stylus to have lateral play of one one hundredth of an inch (the distance from one groove to the next one on a phonograph tablet) would be

so extremely small that there is scarcely a single bearing even in a watch but what has sufficient for this purpose. Every stylus ever made from the first of Edison's machines has a lateral movement enough so that when once fairly entered in the groove it w will follow and track clear through without break and compensate for all variations between the groove of the record and the thread of the master screw.

Now as I do not in my machine use any feed screw or master screw at all, but only the record cylinder itself, so that the groove in the record cylinder becomes itself the master screw, I do not need and do not have any means for correcting such disagreement nor any such disagreement to correct. In my machine the point of the molecular vibrator simply follows the groove because that is the easiest path for it. Lateral variations in the groove do not bend to throw it out of track as they might do if it were carried along by a positive feed outside of or in addition to the record groove. I have no need for the subject matter of these claims, and do not have said subject matter in my machine.

The 24th claim seems to cover the use of a wax sound record in a talking machine. As I buy my wax records of the complainant, I do not see how they can claim I am an infringer when I simply use them in the identical manner intended to be used and the only way they can be used. If they did not intend I should use these records why did they sell them to me. They are sold freely on the open market. Without rubbing a style against these sound records it would be impossible to use them at all. That seems to be the subject matter of this 24th claim.

The 36th 37th and 38th claims are on the hollow arm and standard. These features are useful enough in a diaphragm machine but are of no use in a machine like mine where molecular vibration is relied upon. The hollow glass tube form of arm acts in my machine just like a solid arm would act. And the hole in the standard is simply to hold the ear tube in place.

As to claim 39 of Taintor's patent No.341,288: An effort here is made to claim having the stylus made free to move laterally independent of the diaphragm. All that I have said concerning the claims for the laterally free stylus in the Bell and Taintor patent applies equally to this claim. But in addition to this I point out that my machine has no diaphragm and therefore could not infringe. Moreover the rubbing point of my machine is made solid in one piece with the parts which vibrates.

I am informed and believe it to be true that there has never been any public acquiescence in the Bell and Taintor and Taintor patents sued upon in this case:that on the contrary said patents have been generally disregarded and considered of no effect,by those interested in the talking machine business,and have been repeatedly infringed by numerous persons;that instead of being acquiesced in by Edison and those operating under the Edison patents they have been entirely disregarded. I have however been informed and believe it to be true that a pool or combination was some years ago formed between the Edison people and the graphophone people,and by which the graphophone was licensed under the Edison patents.

The original patent of Edison on the graphophone has always been respected and acquiesced in and whatever monopoly has here-

tofore existed in the talking machine business has been based upon the Edison patents. The original Edison patent on the phonograph however has just expired, and now is public property.

Edward H. Amet.

Subscribed and sworn to before me this tenth day of February, A.D. 1896

R. W. Munday,
Notary Public

UNITED STATES CIRCUIT COURT
NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY	)	
	)	
-vs-	)	IN EQUITY.
	)	
EDWARD H.AMET.	)	

District of Columbia, s.s:

EDWARD D.EASTON being duly sworn says:

I have already given an affidavit herein. I know well the construction of the early Edison phonograph, by which I mean the indenting instrument invented prior to the Bell and Tainter patent. One of the machines is now in the possession of the Columbia Phonograph Company. The reproducer in these machines was on a standard secured to the bed-plate. The style or reproducing point was on a steel bar clamped firmly to the top of this standard and absolutely incapable of lateral movement or play. The reproducer was provided on each side with a set-screw, whereby it could be adjusted to a desired position and clamped therein, when the desired adjustment was found. I am certain that, until the invention of Bell and Tainter described in patent No.341,214 no sound-reproducer was ever mounted on a hinged or flexible joint, so that it could be guided by the groove of the record.

The commercial graphophones have a swivelled reproducer whose play is limited by stops, but which is guided and fed from one end of the record to the other by the groove of the record. To keep the reproducer arm always at right angles to the cylinder, its pivoted end is on a movable sup-

port, fed by a feed screw. I have, long before the Amet machine appeared on the market, tested at the factory of the Company the arrangement adopted in the Amet machine of dispensing with the feed-screw and allowing the reproducer arm to swing the whole length of the record. The question of putting this construction on the market has been considered; but though it is somewhat cheaper and simpler there are disadvantages attending it on account of which it has been deemed advisable not to offer that construction to the public.

Machines of this construction are now at the Company's factory.

Edward D. Easton.

Sworn to and subscribed before me the 14th day of February 1896.

Edward Lewis

Notary Public,
District of Columbia.

United States Circuit Court,

Northern District of Illinois.

American Graphophone Company,		
		In Equity.
vs		
		Genl.No.23,988.
Edward H.Amet.		Term No. 719.

Affidavit of Lewis E.Curtis.

State of Illinois, ss.
County of Cook.

Lewis E.Curtis, of lawful age, being first duly sworn deposes and says that he resides at No. 45, 62nd Street, Chicago, Illinois, and is a mechanical engineer and draftsman by occupation.

When young I learned the trade of a pattern maker and worked for considerable time in a machine shop. For the last twelve years I have been engaged in designing new machinery, making working drawings for new machinery, and preparing Patent Office drawings of inventions for applications for patents. And, in the course of my business, I have examined the specifications and drawings of many hundreds of patents relating to a great variety of subjects. I understand the nature and working of machines from reading the drawings or specifications showing or describing the same, either alone or together. I have frequently been called upon to assist inventors to reduce their ideas to practical form. I have also frequently been called upon to testify in patent infringement suits as an expert.

I have carefully examined the specification and drawings of

the Bell and Taintor patent No.341,214, and of the Taintor patent No.341,220, and thoroughly understand the construction and operation of the so-called graphophone shown and described in said patents. I have also carefully examined and understand the operation of the commercial machines commonly known as graphophones which are manufactured and sold by the complainant, the American Graphophone Company under said patents. I am also familiar with the XXXXXX original and other Edison patents on the phonograph, and with the commercial machines commonly known as phonographs manufactured under and in accordance with the Edison patents, and which are now found in common use nearly every where. And I have also carefully examined the Edward H.Amet talking machine or phonograph and thoroughly understand its construction and operation.

The familiar talking machine instrument now in common use and known as the phonograph, is manufactured under and in accordance with the Edison patents.

And the talking machine instrument now in common use and known as the graphophone is manufactured under and in accordance with the Bell and Taintor patents of the American Graphophone Company.

The difference between the Edison phonograph and the Bell and Taintor Graphophone is really and in fact a difference only in name, the two machines being substantially and essentially the same; and to make the difference in name Bell and Taintor have simply transposed the two Greek words which Mr.Edison had previously adopted for the name of his machine.

Upon examining the commercial phonograph now in common use, it will be seen that it consists essentially of the following

principal and essential parts or devices:

1. A diaphragm, that is to say, a thin, light, flexible disk, usually about three one thousandths of an inch in thickness and about one and one fourth inches in diameter, secured at its periphery or edges in a suitable ring or support, and capable of being bodily moved to and fro at its center by a very slight force, such for example as sound waves in the air produced by the voice, or by a record thereof in wax, tin foil, or other soft material.

2. A stylus or pointed instrument adapted to be moved bodily to and fro, and connected to the diaphragm, so that any bodily to and fro movement communicated to the diaphragm will be in turn communicated to the stylus on the one hand; and so that, on the other hand, any to and fro bodily movement communicated to the stylus will be communicated to the diaphragm. The diaphragm and stylus and the connection between them being of very slight mass or weight, so that they can move to and fro rapidly and by very slight force.

3. A rotating tablet or cylinder having a surface of soft or yielding material, such as wax or tin foil, adapted to be engaged by the stylus, so that the stylus may produce a sound record thereon when it is moved to and fro by the diaphragm with which it is connected in making the sound record; and by which, when the sound record is formed thereon, the stylus by its engagement therewith may be similarly moved to and fro and in turn move the thin light diaphragm to and fro, and thus reproduce in the air the recorded sound waves.

4. A mechanism for rotating the tablet or cylinder to cause its surface to move along in the direction of the line or

groove of sound writing to enable the stylus to record thereon successive sound waves, in the act of recording, and to respond to successive sound records and impart corresponding successive to and fro bodily movements to the diaphragm, in the act of reproducing the sounds from the sound record.

5. A feed mechanism or feed screw to move the tablet or cylinder laterally the space of one line at each successive revolution of the tablet or cylinder, so that, in the act of recording, the stylus may form the line, groove or thread of sound writing on the tablet or cylinder in a continuous true spiral or screw thread; and so that, in the act of reproducing the sound from the record, the stylus may properly register with and fit in or track the spiral groove or thread of the sound writing previously formed in the tablet or cylinder by operation of the same feed mechanism or screw.

6. A connection between the feed mechanism or screw and the mechanism for rotating the tablet or cylinder, so that the lateral or feed movement of the tablet or cylinder may properly and accurately correspond to its rotary movement as required to keep the stylus in proper relative position or register.

The principle, mode of operation, or fundamental idea of the phonograph consists in the discovery that the to and fro bodily movement imparted to the thin, light, flexible diaphragm by the voice or other sound waves in the air may, by communicating them to the stylus through a suitable mechanical connection, cause such stylus, by its similar to and fro bodily movement, to form a sound record or fine groove of varying depth on the surface of a moving tablet or cylinder of soft material; and that by causing the stylus to again traverse the same path by a proper feed movement of

of the rotating tablet it will be similarly moved to and fro by the record and impart similar to and fro bodily movements to the thin, light, flexible diaphragm and thus set the air into the same or similar sound vibrations which it received from the air in the recording operation, and thus reproduce the sounds.

Or as stated with substantial correctness in the affidavit of Edward D. Easton, filed in this case: The foundation principle of the phonograph consists in the cutting of minute impressions upon the surface of a small wax cylinder by means of a tiny cutting instrument or stylus connected with a diaphragm actuated by sound waves, and in these same minute impressions or punctures afterward setting in vibration a similar thin, small, light diaphragm attached to the delicate needle point or stylus which is caused by the feed and rotary movements of the cylinder to again traverse the same path and come in contact with the minute impressions or punctures previously formed thereon in the sound recording operation.

The phonograph comprising these six essential parts or principal elements, the thin, light, flexible diaphragm, the stylus, the connection between the stylus and the diaphragm, the tablet or cylinder on which the sound record is formed, the mechanism for rotating the tablet or cylinder, the feed screw or mechanism for feeding it along the space between the successive threads or lines of sound writing at each revolution, and the connection between the feed screw and the cylinder, all cooperating together according to the fundamental principle or mode of operation which I have already described, was the invention of Thomas A. Edison, and is fully shown and described in the now expired patent to Edison, No. 200,521, dated February 19, 1878. In this expired patent of

Edison the connection or means for communicating the to and fro bodily movement from the diaphragm to the stylus or from the stylus to the thin, light, flexible diaphragm, is a light thread which is kept taut by a light spring that is connected at its lower end to the frame by a pivot or screw, the stylus being carried on the upper or free end of this spring. In this expired patent of Edison the record was formed on a revolving cylinder covered with tin foil as the soft material in which the stylus forms the sound record. But the patent expressly states "Upon this (the cylinder) is placed the material to be indented, preferably metallic foil", and again: "over which (the cylinder) is placed a sheet of thick "metallic foil, paper, or other yielding material". Thus expressly stating, what would any-way have been obvious to skilled mechanics, that other materials might be used. And in still another place the specification of this expired Edison patent makes specific mention of "soft paper, saturated or coated with parafine or simi- "lar material".

In a subsequent patent to Edison, No. 227,679, dated May 18, 1880, the stylus is mounted upon a loose pivoted lever which is interposed between the stylus and the diaphragm, ~~to magnify~~ to multiply the mechanical bodily to and fro movement communicated from the stylus to the diaphragm, or vice-versa. This second Edison patent of 1880 does not differ materially from the Edison phonographs as manufactured and put in use during the past fifteen or sixteen years, and is now found in use in almost every city.

The so-called graphophone shown and described in the Bell and Taintor patent, No. 341,214, dated May 4, 1886, is substantially the same in all material respects as the Edison phonograph of the patents before considered, and it comprises the same principal

parts or devices, combined together in substantially the same way, and cooperating according to the same fundamental principle or mode of operation. The Bell and Taintor patent machine, comprises like the Edison phonograph:

1. The diaphragm or light thin flexible disk secured at its edges in a suitable ring and adapted to be set into a bodily to and fro mechanical movement by a very slight force, such as, the sound waves produced by the voice in the air, or by a record thereof in wax or tin foil or other soft material.

2. A stylus or pointed instrument, adapted to be moved to and fro and connected to the diaphragm so that whatever bodily to and fro mechanical movement is communicated to the diaphragm will be imparted to the stylus, on the one hand; and whatever bodily to and fro mechanical movement is communicated to the stylus on the other hand will be imparted to the diaphragm.

3. A tablet (the patent shows the tablet in the form of a circular disk or plate instead of a cylinder) having a surface of soft or yielding material (wax) adapted to be engaged by the point of the stylus, so that the stylus may produce a sound record thereon when moved to and fro by the diaphragm with which it is connected; and by which, when the sound record has been formed thereon, the stylus by its engagement therewith may be similarly moved to and fro and thus in turn move the diaphragm to and fro and thereby reproduce in the air the sound waves recorded on the tablet.

4. Mechanism for rotating the tablet or circular disk to cause its surface to move along or pass the stylus in the direction of the line or groove of sound writing to enable the stylus to record on the tablet successive sound waves, in the act of recording,

and to respond to and impart to the diaphragm the successive sound records in the act of reproducing the sounds.

5. A feed mechanism or feed screw to move the table or circular disk laterally the space of one line at each successive revolution of the tablet, so that, in the act of recording, the stylus may form the line, groove or thread of sound writing in a continuous spiral; and so that, in the act of reproducing the sound from the record, the stylus may properly register with and fit in or track the spiral groove or line of sound writing previously formed on the tablet or circular plate by the operation of the same feed mechanism or screw.

6. A connection between the feed mechanism or screw and the mechanism for rotating the tablet so that the feed or lateral movement of the tablet may properly and accurately correspond to its rotary movement as required to keep it in proper relative position or register in respect to the stylus.

The fundamental principle and mode of operation of the so-called graphophone shown and described in this Bell and Taintor patent is precisely the same as that of the Edison phonograph of the Edison patents granted, the one, six, and the other, eight years previously; and consists in forming minute impressions upon the surface of a tablet, (which is given simultaneously rotary and feed movements,) by means of a thin, light, flexible diaphragm adapted to be given a bodily to and fro movement by the sound waves in the air, and which to and fro bodily moving diaphragm imparts, by a mechanical connection, a similar to and fro bodily movement to a stylus, the point of which engages the rotating and feeding tablet; and in reproducing the sounds from the sound record on the tablet, by the stylus engaging the same minute impressions [redacted] and

thus imparting in turn similar to and fro bodily movements to the light, flexible diaphragm with which the stylus or delicate needle point is connected, the stylus being caused, by the same rotary and feed movements of the tablet, to again traverse the same path on the surface of the tablet.

In the so-called graphophone of the Bell and Taintor patent all the six principal parts or elements, the diaphragm, the stylus, the connection of the stylus to the diaphragm, the tablet, the mechanism for rotating the tablet, the feed screw or mechanism for feeding the tablet laterally the space between the successive lines at each revolution of the tablet, and the connection between the tablet rotating and feeding mechanisms, are all constructed and combined in substantially the same manner and cooperate according to the same principle and mode of operation as in the two prior patents to Edison of 1878 and 1880. It is the same mechanical, bodily, to and fro movement of a thin, light, flexible diaphragm about three one thousandths of an inch in thickness, connected to the same delicate needle point or stylus, in connection with the same tablet, having the same rotary and feed movements, which does the work in both. And there is absolutely no material or fundamental difference between them, nothing involving any invention.

I have made a very careful study of this Bell and Taintor patent. It is true that it shows or describes some slight changes in the form or construction of some of the parts of the Edison phonograph and some changes in material composing some of the parts; but none of these changes amount to invention or involve any thing more than mere mechanical skill. Some of these changes indeed do not even rise to the dignity of mechanical skill, that is to say, to the intelligent selection by the skilled mechanic of the

best form of material for the particular purpose in view. For example the patent describes the thin, light, flexible diaphragm as being made of hard rubber, and this mere change in the material of the diaphragm is made the subject of claim 44. But such a mere substitution of one material for another in the diaphragm can certainly be nothing more than mechanical skill. Indeed, its selection shows poor mechanical skill or judgment. Hard rubber diaphragms are not used to any extent practically in phonographs, and the complainant, the American Graphophone Company, if it ever used hard rubber as the material for the diaphragm, has long since abandoned its use and employs a different and more suitable material for the diaphragms of the graphophones which it manufactures. Again the patent describes the tablet as being coated with wax instead of metallic foil, as the soft or yielding material in which to form the sound record. But this mere substitution of one soft material for another soft material in which to form the sound record can scarcely be conceived to rise to the dignity of invention, even if Mr. Edison had not eight years previously expressly stated to the public in his 1878 patent, that the material may be "thick metallic foil, paper, or <u>other yielding material</u>". or that "The material for this purpose may be soft paper saturated "or coated with parafine or similar material, [or] with a sheet of "metal foil on the surface thereof to receive the impression from "the indentation point". (Edison patent No. 200,521 middle 2nd column, page 1, and bottom 1st colum page 2.) Yet this mere change in material for coating the tablet is made the subject of twelve different claims, viz: claims 11, 13, 43, 40, and 7, 8, 10, 14, 17, 18 and 24 of the Bell and Taintor patent, and the basis for six more al-

leged method or process claims, viz: claims 1, 2, 9, 15, 16 and 27, on the patent solicitors' theory that by changing the material of the tablet to wax the stylus point will, presto, have a cutting or scraping action as contradistinguished from an indenting action with foil or other soft material. And this same change in the material of the tablet is also the only change and the sole basis for four other claims, viz: claims 3, 4, 6 and 30 in which the same identical diaphragm-vibrated stylus of the Edison patents ~~stylus~~ is again claimed as a so called "cutting stylus".

Another slight change from the Edison patent phonograph which is shown and described and claimed as an invention in this Bell and Taintor patent is the changing of the shape of the mouth piece of the speaking tube, so that it will include not only the mouth but the nose of the speaker and thus mix with the sounds coming from his mouth those coming through his nose. This alleged improvement in the shape of the mouth piece forms the subject of two of the claims of the patent, viz: 39 and 47. This feature is, I think, of little or no importance or value, and it is not, so far as I know, used by any one, and never has been.

Another slight change from the phonograph, which is illustrated in the drawings of the 1878 and 1880 patents of Edison, consists in ~~xxxxxxxxx~~ altering the shape of the tablet from the rotating cylinder of Edison to a rotating disk or plate, and in rotating such disk by a friction wheel engaging its back face, so that, as the diameter of the spiral line or groove of sound writing on its front face varies, the speed of rotation will correspondingly increase or diminish, and thus produce a uniform surface speed or travel notwithstanding the variation in the circumference of the successive turns of the spiral. But this mere

change in the shape of the tablet from a rotating cylinder to a rotating disk or plate does not amount to invention, and would only require mechanical skill; and it would be a poor mechanic indeed who would select a rotating disk or plate instead of the cylinder for use in this connection. Moreover the Edison patent of 1878 describes the rotating disk substitute for his cylinder in these words: "It is obvious that many forms of mechanism may "be used to give motion to the material to be indented. For in- "stance a revolving plate may have a spiral cut both on its upper "and lower faces on the top of which the foil or indenting ma- "terial is laid and secured in a proper manner." And the mechanism for giving a uniform speed as the diameter of the spiral increases or diminishes is a well known and familiar device to mechanics, and its application to such rotary disk or plate could not possibly involve or require any invention. This feature of the rotating disk or plate tablet is of no importance or value, and has been discarded, and it is not used even in the graphophones manufactured by the complainants or owners of this patent. The however forms the subject of three claims, viz claims 40, 41 & 42 of the Patent

Another slight change from the Edison patent phonograph which is shown and descired and claimed in the Bell and Taintor patent as an invention, consists in making the style of a flat flexible spring connected at one end to the diaphragm and projecting at its point end beyond the diaphragm so it can be more readily seen; but there is obviously no advantage in this, and, even if there was, it would require no invention and nothing more than mechanical skill. This feature is made the subject of claims 25 and 26 of the patent. This feature is of no importance or value and it has been discarded, and is not used even in the graphophones made by the complainant as owners of this patent.

Another change from or addition to the Edison patent phonograph, which is shown or described in this Bell and Taintor patent as an alleged improvement, consisting of a cup (marked 13 in Fig.4) which is placed on the opposite side of the diaphragm from the recording stylus. The addition of this cup is made the subject of claim 43 of the patent. It is however a feature of no importance or value and has long since been discarded, and it is not used or found in the graphophones manufactured under this patent by the complainant.

Another slight and trivial change, from the Edison patent phonograph, which is shown and described in the Bell and Taintor patent, consists in mounting the diaphragm and the stylus which forms the record, and which are together called in the patent "the recorder" or the "recording instrument" on a hinged hollow arm which is interposed between the mouth piece and the diaphragm, and operates as a sound conveyor ~~a~~ tube, instead of securing the diaphragm at the inner end of the mouth piece tube itself, as shown in the Edison patents. This feature forms the subject of claims 31, 32, 33, 34 and 35 of the patent. I do not think this feature of lengthening the mouth piece tube so that it may be called a hollow arm, as set forth in claims 31 and 32 would involve invention or require any thing more than mechanical skill, nor the further feature of hinging such lengthened tube, if it was found more convenient to have it hinged.

Another slight and trivial change, which is shown and described and claimed as an invention in this Bell and Taintor patent, consists in mounting the diaphragm and the stylus which are used to reproduce the sound from the sound record, and which are togeth -

er called in the patent "the reproducer"or the "reproducing in-
"strument" upon the inner end of a hollow arm hinged to the
frame and interposed between the diaphragm and the ear piece or
tube, and which hollow arm is provided with a short section of
flexible rubber tubing, so that the reproducer instrument xxx on
its inner end may have any slight infinitisnal lateral movement
that may be necessary to compensate for any unevenness or inac-
curacy in the feed screw mechanism which moves or feeds the tab-
let laterally the space between successive threads at each revo-
lution of the tablet. This feature is made the subject of claims
19, 20, 21, 22, 23, 33, 37 and 38 of the patent. In a machine like the
Edison phonograph or the Bell and Taintor graphophone, which op-
erates on the principle of giving simultaneous rotating and feed-
ing movements to the tablet to cause the stylus to again trav-
erse the same exact path on the surface of the tablet which it
before traversed, it is of course necessary that some play be
given or allowance made for slight disarrangements or irregulari-
ties or inaccuracy in the successive operations of the feed
mechanism which is relied upon to produce the proper registry of
the sound record groove with the stylus, xxx as the tablet or
cylinder is revolved or fed along. The object of or difficulty to
be overcome by thus mounting the reproducer on the free end of a
hollow arm, capable of lateral movement, is set forth as follows in
the specification:

"There exists always a liability to disarrangement in some part of the machine either in the recorder or the support therefor or the recording tablet or its support, or if there be no disarrangement it would be difficult to insure that the reproducing style should touch the record precisely at the proper point if the reproducer be held rigidly. Difficulties on these accounts are avoided by the loose or flexible mounting of the reproducer, the style automatically adjusting itself to the proper place on the record. It will be seen that the reproducer is mounted on a universal joint, so that it can move in any direction. The movement

"parallel with the face of the tablet would however, by itself alone, allow the style to follow and adjust itself to the record to a useful extent.

In operation the reproducer K is placed against the record, and on turning the wheel 8 in the same direction and at about the same speed that it was turned in recording, the record will move the style 26 and plate 28, so as to throw the air in the hollow standard into vibrations, and produce sound waves similar to those which originally acted upon the recording style to make the record".

And it is also explained as follows in the specification of the Taintor patent 341,286:

"Friction wheels for communicating motion to the feed screw are preferred to cog or other toothed gearing, (which could of course be used without departing from the invention,) notwithstanding their liability to slip, because they run smoother and are more easily engaged and disengaged. A slip between the wheels causes the reproducer to be fed faster or slower than the spiral on the tablet permits the style to advance. As a general thing, there is more slip in recording than in reproducing, and consequently the reproducer outruns the style slightly. The style should be given enough side play to compensate for this difference in speed; but if not given the only difficulty is that the style will at length slip across the ridge between the grooves, and thus escape the action of a portion of the record, so that it may be necessary to bring back the reproducer by reversing the feed"

In the phonograph of the Edison 1878 and 1880 patents the necessary side or lateral play exists to compensate for any possible inaccuracy or irregularity in the operation of the feed mechanism. This is so in the 1878 patent by reason of the stylus being connected to the diaphragm by a flexible thread, and supported on the free upper end of a light flexible spring which is connected by a single screw or pivot to the frame at its lower end, so that it would be impossible for the stylus to do otherwise than properly track or follow the line or groove of the sound writing. And provision for such side play or lateral movement of the stylus exists in the 1880 patent of Edison by reason of the loose pivoted lever interposed between the diaphragm and the stylus, the joints of which would necessarily give and could

not be prevented from giving all the play required to compensate for any inaccuracy of the feed screw and to enable the stylus to properly track or follow the line or groove of the sound writing as the tablet or cylinder is revolved and fed along. And it is a well known fact that in the Edison phonograph constructed under and in accordance with these patents, no difficulty whatever has ever been experienced by reason of any supposed disarrangement or irregularity in the operation of the feed mechanism, or on account of any failure of the stylus to properly track or follow the sound record from end to end of the cylinder. In each of these Edison patents the stylus is loosely mounted so that it may move laterally and thus perfectly and truly track or follow the sound record and adjust itself automatically thereto whenever necessary and compensate for any possible disarrangement or inaccuracy in the feed screw or feed mechanism which feeds the tablet cylinder laterally from end to end.

In the Bell and Taintor patent as the connection between the reproducing stylus and the diaphragm is neither a flexible thread as shown in the 1878 Edison patent, nor an interposed loose pivotal lever, as in the 1880 Edison patent, and therefore not such as to permit all the lateral movement independent of the diaphragm which might be supposed desirable, the whole reproducer, consisting of the diaphragm, the ring or support for the diaphragm, the stylus and the hollow air chamber or sound conveyor back of the diaphragm, is mounted on a long hollow armade laterally flexible by the section of rubber tubing, so that the whole reproducer may move laterally to the extent necessary to compensate for any disarrangement or inaccuracy of the feed movement of the tablet and thus enable the stylus to properly track or follow the sound record, or

adjust itself automatically thereto.

The change made by Bell and Taintor, consisting as it does in mounting the whole reproducer loosely or on a laterally moving arm, so that the reproducer as an entirety, its diaphragm and the ring or support for the diaphragm, as well as the stylus, may be capable of the slight lateral movement required to compensate for any inaccuracy of the feed screw or mechanism instead of simply having the stylus loosely mounted and capable of lateral movement, as in the Edison patents, does not in my opinion amount to invention or involve any thing more than mechanical skill. It is true that by mounting the whole reproducer, diaphragm, ring, stylus and air chamber back of the diaphragm on a laterally movable hollow arm, a greater range of lateral movement may be had than is provided in the prior Edison patents. But this is wholly immaterial and of no possible advantage, for the simple reason that in all these phonographs or graphophone machines only the slightest imaginable and almost imperceptible or infinitismal range of lateral movement is required.

The threads, lines or grooves of sound writing on the tablet or cylinder are only about one fivehundredths of an inch in depth, and one hundred or more of these are formed to the inch. As the space between the successive lines, threads or grooves of sound writing on the cylinder is thus only one-hundredth of an inch, and as the tablet feed mechanism or screw keeps the sound record groove and the stylus always approximately in register, it is perfectly obvious that the extreme range of lateral movement or side play which the stylus needs to enable it to properly track or follow the groove is extremely slight, and could not possibly exceed one two-hundredth or one three-hundredth of an inch.

Provision in these machines, where a feed screw is employed to keep the tablet or sound record groove and stylus in approximate register, for allowing any additional side play or lateral movemen of the stylus, over and above the one two-hundredth or one three-hundredth of an inch required to compensate for the inaccuracy of the feed screw is without advantage or utility, and is certainly not invention of even the lowest order. That the stylus mounted on a loose pivoted interposed lever or spring, as in the Edison patents has all the side play or lateral movement necessary to compensate for any inaccuracy of the feed screw mechanism is a fact so plain and obvious to every skilled mechanic that there is no room for doubt concerning it. It would in fact be physically and mechanically impossible that a lever constructed and mounted just as shown in the Edison 1880 patent, could be loose enough at its joint or pivot to move freely to and from the diaphragm as required without at the same time having more than such amount of side play, and sufficient side play or lateral movement to permit the stylus to properly track or follow the sound record groove and compensate for any possible inaccuracy of the feed screw mechanism. And if the lever did not have sufficient looseness at its pivot or joint to work properly what mechanic would not know enough to make it looser? What possible invention can it be imagined to be for a mechanic to loosen a joint which he finds too tight for proper working ? Certainly none. It is a thing which he is called upon to do every day in all sorts of apparatus; and involves nothing more than the merest mechanical skill. I am therefore clearly of the opinion that this supposed feature of improvement consisting in mounting the reproducer upon the end of a hollow hinged arm which has a section of rubber

tubing, or a universal joint as the tubing is called, and loose or free to move laterally to allow the stylus of the reproducer to adjust itself automatically to the groove of the sound writing and compensate for any inaccurasy of the feed screw or mechanism, which keeps the stylus and sound record groove in approximate registry, involves no invention; and is moreover substantially anticipated by the Edison patents of 1878 and 1880. That this Bell and Taintor patent plan of providing for the necessary but very slight and almost inappreciable side play or lateral movement of the stylus to compensate for slight inaccuracies of the feed mechanism in the successive recording and reproducing movements, is in fact no invention or improvement, but on the contrary really a step backward, is also clearly apparent from the following statement in the Taintor improvement patent No.341,288:

"The mounting of the reproducer on a universal joint obviates the difficulty to a certain extent, but not altogether satisfactorily, since the inertia due to the large mass of the reproducer is too great for it to respond as quickly as required. The difficulty is in the present invention overcome much more thoroughly by supporting the reproducing style so that it, or at least the end in contact with the record, can move sidewise independently of the diaphragm or other device upon which it impresses the vibrations. This freedom to move sidewise can be secured by allowing the style to rock upon the end in contact with the xxxxxxxxxxxx diaphragm or other device behind, or by making the style in whole or in part of flexible material, or by mounting it on a flexible support, the flexibility of course being in the required direction".

And this Taintor patent 341,288 shows the stylus mounted upon an interposed small loose arm or lever, substantially identical with the interposed loose pivoted lever of the 1880 Edison patent, as will be seen from Figs.4, 12, 13 or 15 of the Taintor patent. And in Fig.17 of the Taintor patent the stylus is mounted on the upper end of a light flat spring, which is connected by a pivot or screw at its lower end to a support, substantially identical in all respects with the construction shown in the 1878 patent of

Edison.

If any possible doubt could exist in any ones' mind as to the fact that the Edison 1880 and 1878 patent constructions do really give the stylus all the side play or lateral movement necessary to compensate for the inaccuracy of the feed screw mechanism and permit the stylus to properly track or follow the groove of the sound record, it would certainly be removed by the fact that the improved machine of this Taintor patent 341,288, (the application for which was filed by the same Taintor six months after the filing of the Bell and Taintor patent 341,214 joint application,) discards entirely the section of rubber tube or so called universal joint in the hollow arm, and goes back to Edison's original construction, as shown in his 1880 and 1878 patents.

Moreover I find upon examination of Edison's British patent No.1644 of 1878, that the idea of mounting the entire reproducer, that is to say the diaphragm, its supporting ring, the stylus and its interposed loose pivoted lever connection with the diaphragm, upon a hinged arm is fully shown and described. Figs.15 and 19 of this 1878 British patent shows substantially the same hinged arm as is shown and described in the Bell and Taintor patent 241,214 and in the Taintor patent 241,288, with the single exception that the hinged arm of the Edison patent is not hollow or provided with a sound conveyor passage or tube. The hinged arm of this British patent is free to move to and from the tablet or cylinder on its hinge, and it is also loose or free to move laterally to the very limited extent required independent of the feed screw by reason of the natural looseness of the joints, and also be-cause the slide upon which this hinged arm is carried is connected to the feed screw

by an arm having a knife edge or point that slides in the groove of the screw and held there by its gravity. This British patent therefore fully anticipates every feature of these claims of the Bell and Taintor patent and also claim 39 of the Taintor patent.

In Fig.27 of this 1878 Edison British patent there is still another modified construction shown where the stylus of the reproducer is so mounted that it is left just as free to vibrate laterally as it is to and from the cylinder;and in which the stylus is perfectly adapted to automatically track or follow the groove of the sound record. In this Fig.27 construction the stylus is mounted on the end of a long slender arm which is fixed to and projects ~~xxxx~~ at right angles from the center of the thin, light, flexible diaphragm, so that the stylus may have any lateral movement necessary either by the movement of the slender arm itself or by the yielding of the thin diaphragm. And in this connection I notice that the Bell and Taintor patent itself shows one construction, viz the figure 20 construction, in which the hinged arm and its rubber tube section or universal joint is entirely omitted, and in which the socalled loose mounting of the stylus which leaves it free to move laterally and thereby adjust itself automatically to the sound record depends wholly upon the flexibility of the diaphragm to which it is attached. In this connection the specification of the Bell & Taintor patent states:"The same may be said "of the loose mounting of the reproducer, although in point of "fact the thin rubber diaphragm 38 gives a certain lateral play "to the style". It is therefore perfectly obvious that this loose mounting of the stylus or reproducer feature, which is made the subject of the claims of the Bell and Taintor patent and Taintor patent, which are alleged to be infringed by the Amet ma-

chine is fully and completely anticipated by this British patent of Edison, which is eight years prior in date to the complainants' patents.

Again, the U.S. patent to Edison, No. 213,554, shows and describes an apparatus wherein an arm, carrying a stylus on its free end, which is pivoted to the frame by a universal joint, so that it may swing freely laterally as well as vibrate up and down. And the stylus and universal joint hinged arm of this patent is shown combined with a revolving plate or disk, which has a spiral or volute groove in which the stylus rides. And while this mechanism is shown and described in this patent as an automatic telegraph, (the stylus indenting the paper or yielding material with Morse characters, and again riding in the same volute groove to reproduce such characters automatically) the original Edison patent 200,521 on the phonograph in its specification specifically refers to the apparatus of this patent 213,554, applied for March 26, 1877, as one form of apparatus suitable for use in his phonograph. (Vide specification Edison patent 200,521, first column, page 2). And curiously enough the Edison British patent, to which I have above referred, shows among a great number of other forms of his phonograph, one form substantially embodying the apparatus of his U.S. patent 213,554. The Edison patent 213,554, in connection with his patent 200,521, therefore, in my opinion, also fully anticipates this feature of the Bell and Taintor and the Taintor patents. And I have no hesitancy in saying that for the reasons which I have set forth, claims 19, 20, 21, 22, 23, 24, 36, 37 and 38 of the Bell and Taintor patent and claim 39 of the Taintor patent are fully anticipated, and involve no invention in view of the prior state of the art.

I have carefully compared the Amet molecular talking machine or phonograph with the machine of the Bell and Taintor patent, and especially with the subject matter of alleged improvement set forth in claims 19, 20, 21, 22, 23, 24, 36, 37 and 38 of the patent, and am clearly and unhesitatingly of the opinion that it does not contain or embody the alleged improvement set forth in any of these claims. And I will now proceed to give my reasons for these conclusions:

The Amet molecular talking machine is a comparatively simple device. It consists essentially of a molecular body of any suitable form or shape and a sound record which is moved in contact therewith. The rubbing or scraping of the sound record in contact with the molecular body produces in it molecular sound vibrations which are given off in every direction, and may be conducted to the ear by any suitable conductor either solid or hollow. It is quite immaterial in the Amet machine whether the molecular body has any mechanical or bodily to-and fro-movement or not. The machine works equally well if the molecular body be held absolutely rigid, as in a vice, and its rubbing point or part in contact with the sound record be absolutely incapable of moving at all. I have myself operated the Amet machine successfully and perfectly when the molecular body including its rubbing point or part was held in an absolutely fixed position, the sound record cylinder itself being in this experiment mounted on a somewhat loose or springy shaft, and being the only part which had, or could have, any bodily or mechanical movement. The principle of the Amet molecular talking machine is precisely the same as that of rubbing or scraping a file or other rough body against a wooden stick or block of glass. The rubbing action of the file against such a hard

body sets it into molecular sound vibrations, and this is equally true whether the body be held rigid in a vice or suspended or lying loosely. And both the shape and the size of the body are also entirely immaterial, and the part of it which may be rubbed against. In the Anet machine the undulatory groove of the sound record corresponds to the file, and by being rubbed against the molecular body sets it into molecular sound vibrations which the undulations represent.

It is therefore I think quite apparent, that the principle, mode of operation, and construction of the Anet machine is entirely different from that of the Edison phonograph or the graphophone. And in fact all of the distinctive and characteristic features of these prior machines are wholly lacking in Anet's machine. In the first place Anet's machine has no diaphragm - no thin light flexible disk or plate supported at its rim or edge in a ring and adapted to be moved bodily or mechanically to-and-fro, by a very slight force. In the second place there is in the Anet machine no stylus - no light delicate needle like instrument adapted to be moved bodily or mechanically to-and-fro rapidly by a very slight force, and connected to a diaphragm, so as to receive from or impart to it such bodily mechanical to-and-fro movements. All of this delicate apparatus, distinctive of the phonograph, is wholly lacking in the Anet machine. In the Anet machine there is also no feed mechanism, or screw, for feeding the tablet along the space between successive threads at each revolution; and of course there is no mechanism for connecting such a feed screw with the mechanism for rotating the tablet. The necessary parts of the Anet machine, as will be seen upon examination of it, are but three: first, the molecular body or piece of glass, having a

part of it drawn to a point to adapt the groove of the sound record to rub against it; second the tablet or sound record itself; and third a spring motor or mechanism for revolving the sound record. The molecular body is preferably and most conveniently made of a piece of glass, though it may consist of a stick of wood. It is preferably made in the form of a rod, so that while its pointed end rests on the sound record, its other end may lie upon a suitable support, or pivot, and thus enable the pointed end of the rod to be carried along from one end of the sound record tablet or cylinder to the other as it rides thereon. The ear tube may be attached to any portion of the molecular body, directly or indirectly through any suitable intervening object, frame or support. Or (though, it is not quite so convenient,) the end of the glass rod itself may be placed in the ear. It is entirely immaterial whether the glass rod be hollow or solid. If the rod or molecular body were made of wood, as it may be, it would be cheaper and better to have it solid; if it be made of glass as it usually, though not always, is, it is cheaper and less liable to break if the rod is hollow and in the form of a tube. But the hole in Anet's glass molecular body or tube is entirely without significance, so far as the operation of the machine is concerned. I have seen and used Anet's machine where the molecular body was made of a solid globe and its operation was the same.

The little piece of wood in the Anet machine furnished with an upright wooden peg to receive the bent end of the glass tube, is not a diaphragm in any sense, and is not an essential part of the machine. It operates as a support or pivot for this end of the glass tube, and to form a convenient conductor connection between the glass tube and the india rubber ear tubes. It also

serves as an amplifier of the sound though somewhat at the expense of distortion. As an amplifier of sound it has about the same function, in Amet's molecular talking machine, that the sounding board of a piano has in that instrument; or that the cone or horn which is sometimes put on the Edison phonograph, has in that machine.

In the Amet machine, as the feed screw or mechanism is entirely dispensed with, there is of course no need of any provision to compensate for, or correct irregularities due to its action. Amet by dispensing entirely with the feed screw at the same time dispenses with the contrivance or alleged invention of the Bell and Taintor patent and of the Taintor patent for obviating the difficulties arising from inaccurate or irregular operation of such feed mechanism in its successive movements to cause the stylus to traverse the same path on the sound record. It is therefore obvious for this reason alone, that no one of the claims alleged to be infringed is in fact infringed by the Amet machine.

In the Amet machine the pointed end or rubbing part of the molecular body or rod is moved from end to end of the sound record cylinder through the sole agency of the sound record itself, and there is therefore never any possibility of its getting out of adjustment therewith. There is no master screw or any thing else for it to get out of adjustment with, and no need for the Bell and Taintor, or Taintor or Edison, or any other contrivance to keep it in adjustment.

I have carefully read the affidavits of Mauro, Brown and Easton filed on behalf of the complainant in this case. I do not agree at all with the conclusions which they express. It is perfectly evident from their affidavits that neither of them had any

true understanding of the real nature, construction and operation of the Amet molecular talking machine. Their conclusions are evidently based on an entire misconception of the Amet machine. For example, in regard to claims 36, 37 and 38 of the Bell and Taintor patent they evidently supposed, that because in the Amet machine which they saw the molecular body or glass arm happened be made of a tube and hollow that the sound was conveyed through the hole, just as it actually is conveyed through the hole in the hollow arm of the graphophone. Whereas the fact is that this hole in Amet's machine performs no function whatever in conveying the sound. A solid rod works just the same as the hollow tube. In Amet's machine it is the molecular vibration in the particles of the body itself that does the work; the hole has nothing to do with it. It is apparent that if these wetnesses had understood the Amet mechanism at all, they could not have come to the conclusion by any process of false reasoning that these claims are infringed.

The claims in the Bell and Taintor patent on the flexible mounting of the reproducer, are all much alike in wording, and as Mr. Philip Mauro in his affidavit selects claim 20, as the principal one I will more particularly consider it. This claim 20 reads as follows:

"20. The reproducer loosely mounted on a suitable support so that "the reproducing style is capable of lateral movement and may in "consequence thereof adjust itself automatically on the record, "substantially as described".

To understand what this claim means it is first of all necessary to refer to the specification to ascertain what is meant by the term "reproducer". The thing called in the specification the "reproducer" is also referred to as the "reproducing instru-

"ment"and it comprises the diaphragm,the ring or support for the diaphragm,the sound chamber back of the diaphragm,the stylus,and the means for connecting the stylus to the diaphragm. It is the entire instrumentality xkaxmx or apparatus shown in Figs.7 and 8 of the drawing of the patent. It is the little instrument which is marked "Reproducer"on the commercial graphophone. Three different forms of it are shown in the drawings of the patent,but each comprises all of the five parts above enumerated. The specification states:

"Figs.7 and 8,views in elevation and section respectively,of "the reproducer;Figs.9 and 10 similar views of another form of "the reproducer" /

"The reproducer K shown in figs 7 and 8".

Then follows a detailed description of the whole reproducer including the diaphragm,its ring or support,the sound chamber back of it,the stylus marked 26,and the means for connecting it to the diaphragm.

And it is this whole instrument consisting of all these parts united together,and as a whole called the reproducer which is the thing loosely mounted on the arm by means of an universal joint made of a short section of rubber tubing joining it to the rigid part of the arm,and which instrument as a whole is thus made one of the express elements of this claim. The subject matter of this claim is not present unless the whole reproducer is present,its diaphragm as well as its stylus &c.

In the Amet machine where there is no diaphragm,no ring or support for any diaphragm,it is obvious without going farther that this element of the claim called the "reproducer"is not found,and consequently that the claim is not infringed.

And for the same reason the other claims on this subject

also are not infringed, including claim 4 which calls for the reproducer as an element.

Claim 24 moreover only differs in the material of the record - wax - from the phonograph of the Edison 1878 and 1880 patents, in both of which there is a reproducer having a rubbing style. Even if it could be supposed that this mere change in material could involve patentable invention, and that the other claims in this patent on the wax sound record, per se, were valid claims, it certainly could involve no invention to put the sound record of the new material into the old machines and use it the same as the old record had been used. It does not make any new combination. But even if it did, as Amet, as I understand, buys his sound records already made from the complainant, and as the complainant sells them for use on the open market, I can hardly see but what this amounts to a consent for their use in a talking machine which is the only place where they can be used, and hence I have not thought it necessary to pursue the investigation of this claim farther.

In the Amet machine I have successfully used an ordinary lead pencil as the molecular body by simply resting its end on the revolving sound record. And in all material respects the lead pencil is the same as the glass tube of the Amet machine. It seems to me too absurd for reasonable contention that a lead pencil is the same thing as the delicate instrument defined as the "reproducer" in the Bell and Taintor patent.

The statements in the affidavits of Mr. Mauro and Mr. Brown: that the piece of wood upon which the outer end of the glass rod rests in the Amet machine is a diaphragm and corresponds to the diaphragm of the reproducer in the Bell and Taintor patent is

based upon a complete misconception and misunderstanding of the principle and nature of the Amet machine. This little piece of wood is not, in any sense, a diaphragm, and corresponds neither in construction or function to the thin, light, flexible disk three one thousandths of an inch in thickness, adapted to be moved bodily and mechanically to and fro by the tiny needle-like stylus or by the sound waves in the air. It is not supported at its edges by a ring so as to have the action of the diaphragm, nor is it capable of being moved bodily to and fro. This little piece of wood in the Amet machine serves simply as a support and pivot to the outer end of the glass rod, and as an amplifier of the sound. If the finger is placed upon the diaphragm of the graphophone its bodily vibration is stopped and you get no sound, but if one puts their finger on the piece of wood in the Amet machine, or places a heavy weight upon it, its operation is not affected and the sound being given out just the same. This shows conclusively that this piece of wood in the Amet machine corresponds in no sense to the diaphragm of the graphophone or phonograph. Moreover the piece of wood in the Amet machine may be entirely omitted without affecting the operation, as I have also heard and seen the machine operate perfectly when an apple was substituted for this alleged diaphragm.

Claim 39 of the Taintor patent is not only fully anticipated by the Edison U.S. and British patents, to which I have before referred, but it is also clearly not infringed by the Amet machine for the reasons before set forth, and because the Amet machine has no reproducer as called for by this claim, and certainly no diaphragm, which is an indespensible part of the Taintor patent reproducer.

Louis E. Curtis.

In the United States Circuit Court, Northern District of Illinois.

In Equity.

American Graphophone Company vs Edward H. Amet.	| -|- |	Gen. No. 23,986. Term No. 719.

Affidavit of Edward H. Amet:

State of Illinois, |
-|-ss.
County of Cook. |

Edward H. Amet being duly sworn says:

I have read the affidavit of Mr. Easton and of Mr. Taintor. Mr. Easton says that long before the Amet machine xxxxpxx appeared on the market he had tested at the factory of the Company the arrangement adopted in the Amet machine of dispensing with the feed screw and allowing the reproducer arm to swing the whole length of the record. XXXXXXX And Mr. Taintor says much the same thing. But neither of them says that this idea originated with the Graphophone Company, or any one in their employment. And they omit to state where they got this idea. The fact is they got it from me. Nearly a year ago, and long before my machine appeared upon the market I built a machine embodying this arrangement and showed it to an agent of the Graphophone Company here in Chicago. This is the source of the idea.

The Graphophone Company has absorbed a good many of my ideas. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX They have appropriated my tablet paring knife, and are now manufacturing them without authority.

Edward H. Amet.

UNITED STATES CIRCUIT COURT

Northern District of Illinois

American Graphophone Company)
) General No. 23,986.
versus :-- IN EQUITY---
) Term Number 719.
Edward H. Amet.....)

ADDITIONAL AFFIDAVIT OF ARTHUR S. BROWNE.

District of Columbia:
--to wit:-
County of Washington:

ARTHUR S. BROWNE, being duly sworn deposes and says as follows:

I have already given an affidavit in this case.

I am familiar with the construction and operation of the early Edison Phonograph, both from the publications and patents describing it, and also from examination of actual machines and witnessing their operation. I examined the early Edison phonograph and witnessed its operation in the early part of 1879 and again during the year 1895.

G.M.F."N.P" I have read the ~~evidence~~ affidavits of Edward H. Amet and Lewis E. Curtis entitled in this cause.

I have very frequently examined and am familiar with the U. S. patents of Edison No. 200,521, Feb. 19, 1878, and No. 227,679, May 18, 1880, and his British patent No. 1644, ~~1878~~, April 24, 1878, which patents described and illustrated the early Edison phonogrpph. None of the early Edison machine contained, and no one of the patents above-referred to describe or suggest the subject matter of any of the claims of the patents in suit referred to in my former affidavit herein. In fact, when the characteristics of the tin-foil record are introduced, it will be seen that the reproducing apparatus, pivoted to swing laterally and resting by gravity on the record

as employed in the graphophone patents in suit could not be usefully employed in connection with a tin-foil record or any similar pliable record capable of being indented in accordance with the mode of operation of the early Edison machines and patents.

There is a radical primary and fundamental distinction between the early Edison phonograph and the graphophone of the patents in suit. In the early Edison phonograph a metallic cylinder was employed having a spiral groove in its periphery and the record or phonogram ~~constituted~~ consisted of a pliable material such as tin-foil wrapped around the grooved metallic cylinder. The sound record was formed in the tin-foil phonogram by a vibrating stylus which pressed the pliable tin-foil into the spiral groove. The reproduction of the sound was produced by a reproducing stylus which was itself vibrated by the cooperation of its point and the indented record formed in the tin-foil phonogram.

On the other hand the graphophone of the patents in suit operates upon a wholly different principle. In the graphophone the record or phonogram is a cylinder having its surface conposed of a solid mass of a wak-like material and the sound record is cut therein by the engraving action of a vibrating cutting style which cuts a spiral groove of varying depth and shape corresponding with the sound waves, said groove having sloping walls and being formed by the removal of the wax-like substance of the phonogram. The reproduction is effected by a reproducing stylc which follows the sinuous cut spiral groove in the phonogram being thereby vibrated and its vibrations being communicated to a suitable diaphragm, sounding-board, or amplifier for the purpose of rendering the reproduced sounds plainly audible. The radical distinction between the early Edison phonograph and the graphophone is thus seen to reside in the fact that in accordance with the early Edison phonograph the record was formed by indenting the sound record

in a pliable substance such as tin-foil wrapped around a spirally grooved support, whereas in the graphophone of the patents in suit the sound record is formed by cutting out a groove from the material of the wax-like substance of the phonogram.

With this statement of the radical distinctions between the early Edison phonograph and the graphophone of the patents in suit, the essential differences between the subjects-matter of the claims of the patents in suit as compared with the prior Edison patents referred to by Messrs. Amet and Curtis, will be readily understood.

The property of tin-foil used by Edison in virtue of which it was possible to record approximations of sound vibrations in it, is its extreme pliability enabling it to bend with minimum resistance. It is evident therefore that if the reproducer which is quite a heavy part of Edison's machine, rests by its weight on the tin-foil record, it would simply flatten out the minute recorded vibrations. The briefest consideration of the matter also will show that the tin-foil record could not guide the reproducer arm carrying the reproducing point or style. In fact, rigidity of the reproducer arm was a feature, and an essential feature, of the early Edison phonograph.

On the other hand as I have already pointed out one of the essential characteristics and chief points of novelty and utility of the graphophone is the record cut out or engraved in a solid resisting body. This is radically and fundamentally different from the indented or impressed record of the early Edison phonograph, and it seems hardly necessary to point out that the operation of a reproducer laterally swivelled so as to follow or track the record and resting by gravity thereon, is dependent for its useful operation upon a record made in resisting material. The conditions presented by the graphophone record are therefore exactly the reverse of those presented by the Edison tin-foil record.

Patent No. 227,679, is the last phonograph patent taken out by Mr. Edison prior to the patents in suit. The recording medium is tin-foil. The conditions are such that the improvements specified in the claims which defendant infringes (which relate to the reproducer exclusively, since defendant's machine is a reproducing machine only) could not possibly be a part of the apparatus there described. The arm carrying the diaphragm as shown in Fig. 2 is held rigidly when in use, in a vertical position, by means of the locking piece 10 and slots 11. (See page 1, lines 68 - 72) The spring 9 is merely to throw the arm away from the record when unlocked.

The instrument shown in Figs. 3 and 4 of this patent has the recorder (not the reproducer) swivelled on an upright arm, and held in its operative position by means of a spring. The recorder, nevertheless, is held ~~by means~~ in a fixed operative position. The pull of the spring brings the screw surface 25 on the recorder into engagement with the screw s on the cylinder, which fixes the position of the recorder with reference to the cylinder, serving ~~exactly~~ exactly the same purpose as the stop 8 in Figs. 1 and 2. Manifestly, it is not contemplated that the recorder should yield, it being essential that the tin-foil should do all the yielding.

The patent does not describe any particular construction or operation of a reproducing apparatus, and has no bearing whatever that I can see upon the claims alleged to be infringed.

Mr. Curtis, defendant's expert witness, is entirely in error as to what is disclosed by this Edison 1880 patent. The arm carrying the indenting style is not, ~~in the operation~~ when in use, capable of any lateral ~~vibration~~ movement at all, being then clamped in position, so that no matter whether the pivot joint was loose enough to permit lateral play, there could be no lateral play when the ~~operation~~ instrument is in use. Mr. Curtis also

G.M.F. "N.P."
G.M.F. "N.P."
G.M.F. "N.P."

gives it as his opinion that no difficulty was experienced in the early Edison phonograph in causing the stylus to properly track the record. This opinion is evidently ~~not~~ expressed G.M.F. "N.P." neither upon experience nor by the reading of the Edison 1880 patent. The Edison 1880 patent says:

> "The arm 5 carrying the diaphragm b, should be pivoted at 7 7 by pointed screws so as to adjust the position of the recording point of the diaphragm b relatively to the grooves of the cylinder."
> (Page 1, lines 62-66)

It will thus be noted that Edison provides means for laterally adjusting the stylus-carrying arm so as to enable the style to register with the groove. Yet according to Mr. Curtis, no such adjusting mechanism is necessary but there would be sufficient looseness in the pivot joint to obviate this necessity. Mr. Edison however recognized the necessity for such adjustment because lateral flexibility in his stylus-carrying arm would have been absolutely fatal to the results he desired to accomplish.

Patent No. 200,521, to which Mr. Curtis also refers is the original Edison Phonograph patent. The recorder and reproducer (~~have~~ bolt are) held rigidly, the grooved cylinder holding the sheet of tin foil or other yielding material being traversed by means of a screw. The flat spring on which the reproducing style is mounted is incapable of lateral flexure, and no such lateral flexure is suggested in the specification.

Mr. Curtis also refers to Figs. 15, 19, and 27, of Edison's British patent No. ~~1644~~ 1644, April 24, 1878, stating that he finds the features of the claims of the patents in suit in question in these Figures. It is to be noted, in the first instance, that Figs. 15 and 19, relate exclusively to the record mechanism and not to the reproducing mechanism at all. G.M.F. "N.P." Referring to these two ~~figs~~ Figures Mr. Curtis says that the hinged arm of the recorder "is also loose or free to move laterally to to the very limited extent required independent of the

screw by reason of the natural looseness of the joints". Mr. Curtis did not obtain this information from the patent itself. Concerning the construction shown in Fig. 15, the patent itself says on page 6 as follows:-

> "In Fig. 15 the phonograph is fitted to move horizontally instead of the cylinder q, as in Fig. 12, but the shaft e^1 is provided with a screw thread in one direction only, hence the phonograph has to be positioned by hand after the arm o^1 has been raised from the screw k^1.
>
> "In Figs. 12 and 15, the phonograph can swing upon the shaft l^1 to raise the indenting point from the cylinder q, and allow for the removal or insertion of a sheet of tin foil, and there is a stop 8 for adjusting the position of the phonograph when brought down to indent the foil."
>
> (Lines 46 to 55)

From this extract it appears that Mr. Edison had to position the stylus by hand in order to cause it to properly register with the groove in the cylinder, and consequently there was no sufficient lateral play to obviate this necessity. As a matter of fact it will be noted that the stylus-carrying arm is located upon a long sleeve sliding on a shaft so that there is no possibility of any lateral movement of the stylus carrying arm. In this connection I call attention to the fact that in the original Edison phonograph the cylinder was about 8 inches in diameter.

In the construction shown in Fig. 19, there can be no lateral vibration of the stylus carrying arm because it is pivoted at two places, that is to day to a fixed bracket and to the diaphragm. So if there was any looseness of the joints as Mr. Curtis imagines there might be, (without any foundation however in the Edison patent itself), there could be no lateral movement because the stylus carrying arm is connected at two points. Concerning Fig. 27, the Edison British patent says:-

> "Fig. 27 represents two instruments in connection with the cylinder q; in this case the phonet and the phonograph are separate. The phonograph records in the usual manner but the phonet has its diaphragm set in motion by the rise and fall of the lever e^2.

This reduces the scraping noise of the foil and acts by leverage, and a slight tension to move the diaphragm as the phonogram is moved beneath the point c,"
(Lines 20-25, page 8)

This is the sole description of this figure. Mr Curtis imagines that there may be some lateral movement in this construction "either by the movement of the cylinder arm itself or by the yielding of the thin diaphragm". In this connection it is to be observed that no plan view is given of the construction shown in Fig. 27 and there is no means of knowing how broad the spring e^2 is. For all we know to the contrary, it may be so broad as to be absolutely incapable of any lateral movement. There is nothing in the patent to show that the diaphragm is sufficiently thin to be capable of any lateral movement. In this respect there seems to be some discrepancies between Mr. Curtis and Mr. Amet because Mr. Amet referring to Edison's diaphragm says that "Edison depends upon bodily to-and-fro movement in a single direction. I depend upon molecular or internal vibration and in every direction."

In this connection Mr. Curtis calls attention to the modification shown in Fig. 20 of the Bell & Tainter patent in suit No. 341,214 and to the description thereof on lines 4 to 18 of page 6. Mr. Curtis is wrong in this inference which he draws from this modification because this modified reproducer is used only in connection with a straight band constituting the sound record in which the sound groove exists in a continuous straight line and consequently no lateral play is necessary. However this may be, the Bell & Tainter patent in suit here states that "the thin rubber diaphragm 38 gives a certain lateral play to the style". There is nothing whatever in any of the prior Edison patents intimating or suggesting that a sufficiently thin or flexible diaphragm is employed capable of allowing any lateral play whatsoever to the style.

Mr. Curtis also refers to Edison's automatic telegraph patent No. 213,554 dated March 25, 1879. Mr. Curtis

states that the Edison patent No. 200,521, refers specifically to this automatic telegraph patent of 1879 as showing an "apparatus suitable for use in his phonograph." Mr. Curtis however fails to state, what is a fact, that the Edison patent No. 200,521, simply refers to the automatic telegraph patent of 1879 as showing apparatus for producing the record by magnetic means and not for the purposes of reproduction. Mr. Curtis further stated that this automatic telegraph patent of 1879 "shows and describes an apparatus wherein an arm carrying a stylus on its free end is pivoted to the frame by a universal joint so that it may swing freely laterally as well as vibrate up and down." Mr. Curtis does not state in what Figures of the drawings this construction is shown and where it is described in the specification, and I am unable to find any such construction in this patent. However this may be, this automatic telegraph patent has nothing whatever to do directly or inferentially with sound reproduction.

Neither Mr. Ames nor Mr. Curtis asserts as far as I am able to discover that they find anywhere in the prior art the "rubbing style" or the "wax-like" sound record of claim 24 or the "hollow standard" of claims 36, 37, and 38, of the Bell & Tainter patent No. 341,214, or the reproducer "style movable sidewise independently of the diaphragm" of claim 39 of the Tainter patent No. 341,288. They content themselves with saying that the subjects-matter of these claims do not involve invention but were such modifications of the early Edison phonograph as was within the province of the ordinary mechanic to make. A sufficient answer to this is that everything that went before the patent in suit was a complete failure from a practical and commercial standpoint; that the practical and commercial success of recording and reproducing sounds is due wholly to the inventions of the patent in suit; and that the particular subjects-matter of these claims have contributed largely to the success of the graphophone.

In order that the importance of the graphophone inventions of the patents in suit may be fully appreciated and understood a brief resume of the state of the art as it existed prior to the date of the patents in suit seems desirable.

As long ago as 1681 it had been demonstrated by Robert Hooke that musical and other sounds could be produced by the striking of the teeth of brass wheels against a card; it having been observed that the equal or proportional strokes of the teeth made musical notes while the unequal strokes of the teeth more nearly answered the sound of the voice in speaking. In 1857, Leon Scott brought out his "phonautograph" or "vibrograph" which was a mechanism for producing a graphic representation of sound waves. Scott's phonautograph had a rotating and advancing cylinder covered with a sheet of paper ~~covered~~ coated with lamp black and a spirally, and laterally undulated, line was traced by the removal of the lamp black so as to expose the paper by means of a vibrating stylus carried by a membrane or diaphragm stretched across the mouth of a funnel or trumpet. Scott thus produced a sound record, but was unable to reproduce sounds. The next step in the advance of the art was taken by Charles Cros, a Frenchman, who, early in 1877, suggested an improvement which was virtually a combination of the suggestions of Hooke in 1681 and of Leon Scott in 1857. According to Cros' method a tracing, laterally undulating, corresponding in shape to the sound wave was produced by a vibrating stylus upon a metallic cylinder by the removal of a film on the cylinder thus

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exposing the metal surface of the cylinder along the tracing. The cylinder was then exposed to the action of an etching acid which attacked only the exposed traced surface of the cylinder thus cutting a laterally undulating groove in the surface of the cylinder corresponding in shape to the sound waves. The etched cylinder thus formed was used for the purposes of reproduction; the undulating etched groove acting upon a stylus to vibrate the same just as the toothed wheel of Robert Hooke had vibrated a card to produce a sound. The Cros method, as far as developed by him, however, was not commercially practicable, and never went into public use. Later in the same year, 1877, the Edison tin-foil phonograph was brought out in which the sound record was produced by indentation. This was followed by a number of suggestions from various sources, such as, the Lambrigot six-penny phonograph, wherein a lead wire having its surface undulated to correspond with sound waves was used in connection with a card passed along its surface for the purposes of reproduction. One Reynolds also procured a U.S. patent in 1883, for vibrating a metallic strip in consonance with sound waves, while at the same time advancing it longitudinally, so that its edge was brought in contact with a rotating cutting disk having a sharp edge, the supposition being that serrations would be cut in the edge of the metal which would serve for sound reproduction.

None of the suggestions or schemes prior to the date of the graphophone patents in suit met with any degree of success or were capable of the intelligible reproduction of vocal sounds with the exception of the early

G.M.F. n.p.

Edison phonograph, and this instrument, although when first brought out looked upon as a remarkable invention, proved to be capable of no commercial utility. It was incapable of reproducing vocal sounds with intelligibility. In a very short time it was looked upon merely as an interesting scientific toy. The utter failure of the early Edison phonograph from a commercial or practical standpoint is well stated in an article entitled "Engraving Sounds" contained in the Journal "Engineering", published at Nos. 35 and 36 Bedford-Street, Strand, London, W.C., for Sept. 14, 1888, from which I quote as follows:

> "Towards the close of 1877, the public mind, which for twelve months previously had been fairly overwhelmed with the discoveries of scientific investigaters, was again excited by the announcement that Mr. E.A. Edison had discovered a method of mechanically reproducing speech by means of an instrument which could record and afterwards repeat, messages spoken into it. Under the name of the phonograph this most ingenious apparatus speedily became familiar to every one, and during the Paris Exhibition of 1878, it, with the telephone, ranked among the principal attractions. With the profound and simple faith that was so prevalent at that time in all which emanated from Mr. Edison's laboratory, a great and useful future was predicted for the invention. Unfortunately events did not justify this sanguine forecast; the phonograph quickly descended to the level of a scientific toy, the monopoly of which had been acquired by an enterprising London firm. Later on, in the course of a famous series of lawsuits, it was found that Mr. Edison's patented claims for the phonograph in this country, were included in another and more important patent, the validity of which was thereby jeopardized, and Mr. Edison did not hesitate to cut off and cast out the offending member, in order to save the rest of his patent alive."

As further showing the failure of the early Edison phonograph I would refer to the Journal "The Electrical World", published at the Potter Building, New York, N.Y., for November 12, 1887, which at pp. 257 and 258 contains an article entitled "The New Edison Phonograph."

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This article is a reprint of an interview with Mr. Edison contained in the New York Daily newspaper the "World" for November 6, 1887. I quote from this interview as follows:

> "There were all sorts of objections in detail to my first instrument. It weighed about one hundred pounds; it cost a mint of money to make; no one but an expert could get anything intelligible back from it; the record made by the little steel point upon a sheet of tin foil lasted only a few times after it had been put through the phonograph. I myself doubted whether I should ever see a perfect phonograph, ready to record any kind of ordinary speech and to give it out again intelligibly. But I was perfectly sure that if we did not accomplish this, the next generation would. And I dropped the phonograph and went to work upon the electric light certain that I had sown seed which would come to something."

Mr. Emil Berliner, who is well known in connection with the telephone, read a paper before the Franklin Institute, which ~~was published~~ appeared in the "Journal of the Franklin Institute", published at Philadelphia, Pa., for June, 1888, in which he gives a history of the art of recording and reproducing sounds, including also a description of the graphophone of the patents in suit. From this article I quote as follows:

G.M.T. "N.P."

> "But, to return to the phonograph, we find this apparatus remained in an unsatisfactory and unfinished condition for nearly nine years.
>
> Among those who believed that ultimately it could be turned to practical account was the well-known original patron of the speaking telephone, Mr. Gardiner G. Hubbard; and, being also financially interested in it, he, in 1883, or thereabouts, caused the Volta Laboratory Co., an association originally founded by Prof. Bell as a laboratory, from the funds of the Volta Prize awarded to him by the French Government, to provide ample funds for the purpose of making an extensive series of experiments with the phonograph.
>
> Prominent among the scientists connected with the enterprise were Prof. Bell, Dr. Chichester A. Bell, and Mr. C.S. Tainter. After two years of ardent labors these gentlemen came to the conclusions:
>
> First. That the indenting process had to be abandoned and an engraving process be substitut-

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ed--i.e., instead of pushing the record surface down with the stylus, as in the original phonograph, it should rather be dug out or graven into.

Second. That the best substance, answering also the various other requirements, was beeswax hardened by an admixture of parkaffine or other similar waxy substances.

Third. That loud speaking was impracticable, and that the ordinary conversational tone gave better results, although reducing the reproduction to the loudness merely of a good telephone message."

"As a final result of all their labors, there issued in the spring of 1887 the graphophone, the first really practical apparatus of the phonograph type, and which was exhibited to admiring crowds in Washington and elsewhere.

The record ground of this machine is a thin pasteboard cylinder covered with wax.

Soon after the graphophone became generally known, Mr. Edison, evidently encouraged by the results obtained in this instrument, took again to experimenting with the phonograph, and, after trying wax covered with tin-foil for indentation, he abandoned that mode of recording, and also settled upon a cylinder of wax and the graving-out process, thus confirming the correctness of Bell and Tainter's conclusions, and the new Edison phonograph and the graphophone appear to be practically the same apparatus, differing only in form and motive power."

Beginning with the graphophone inventions of the patents in suit there has been an era of commercial and practical success in the recording and the reproduction of sounds; and every talking machine from the dates of these patents to the present day, which has been in commercial and public use, has contained the fundamental principles of the patents in suit. And prominent among the features of these graphophone inventions to which their success has been largely due are the loose mounting of the reproducer which permits it to adjust itself automatically on the record, the rubbing reproducing style, which traverses the sound record, the hollow sound conveyor, and the

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sidewise movement of the reproducing style independently of the diaphragm or sounding board, which features constitute the subject matter of the claims of the patents in suit, and which are embodied in the defendant's machine.

I think that in my former affidavit I have clearly shown that the defendant's machine unmistakably embodies the subjects matter of claims 19, 20, 21, 22, 24, 36, 37 and 38 of the Bell and Tainter patent No. 341,214 and of claim 39 of the Tainter patent No. 341,288, and accordingly I will not go over the ground again. I will, however, consider the grounds stated by Messrs. Amet and Curtis of their opinions to the effect that defendant's machine does not contain the subjects-matter of these claims.

Mr. Amet in his affidavit refers to numerous experiments made by him and his supposed discovery of important facts concerning the production of sound and its transmission through various bodies. These things which Mr. Amet imagines to be his own discoveries have for many decades been familiar facts in the science of acoustics and known to every school boy who has studied any elementary work on the subject of physics or acoustics. All of the supposed discoveries of Mr. Amet will be found thoroughly discussed in any elementary text book on the subject of acoustics or even in the ordinary dictionaries. All of Mr. Amet's "discoveries" will be found fully explained in the "Century Dictionary" in defining the words "wave", "sound", "light", "vibration", "acoustics", "molecular", and "undulatory". See also the definitions of the

same words in the "Standard Dictionary " Published by the Funk & Wagnalls Co., at New York. Most, if not all, of Mr. Amet's discoveries have been familiarly known since the days of Sir Isaac Newton. The time I have had at my disposal has been insufficient to enable me to refer to any of the elementary text books on the subject except those in my own library and accordingly I will content myself by referring to the elementary text book entitled "Sound" by John Tyndall. My copy of this book is a reprint of the edition of 1875, and consequently contains no discussion of the phonograph, graphophone or telephone, which have been brought since the time that this book was written. All of Mr. Amet's "discoveries" will be found fully disclosed and discussed in this book. The vibratory theory of sound transmission; the analogy between sound waves and the transmission of heat, light electricity and magnetism; the transmission of sound through gaseous, liquid and solid substances, the mode of transmission of sound through these substances; and the relations existing between the amplitude and rapidity of the sound vibration on the one hand, and the density and elasticity of the sound conveying medium on the other hand, are fully treated of in the first chapter of this book;—and the influence of sound boards or diaphragms for increasing the intensity of the sound is fully discussed at pp. 106 to 118 of the book. The molecular vibratory theory of sound transmission which Mr. Amet imagines to be a discovery of his own has long been a familiar fact in the science of acoustics and is treated of by Prof. Tyndall at the

G.M.F. "U. S."

very outset of his book in extenso. The vibratory or wave theory of the propagation of sound as well as of light, heat, electricity and magnetism is simply,-that the sound is conveyed by a to-and-fro excursion of the molecules or particles of which the sound conveying medium is composed, as contradistinguished from the bodily transference of the particles from one place to another. For example, when I speak, the particles of air do not pass from me to the ears of my hearers, but on the other hand, the particles of air in the vicinity of my mouth simply vibrate back and forth coming ultimately to rest in substantially the same position which they initially occupied, and their movement is communicated to adjacent particles, by them to others in their vicinity, and so on until the ear of the hearer is reached. The extent of the vibration of the particles is a function of the loudness of the sound, and the elasticity and density of the sound conveying medium. As stated by Prof. Tyndall on page 74, the velocity of the sound "depends on the elasticity of the air in relation to its density. The greater the elasticity the swifter is the propagation; the greater the density the slower is the propagation." The velocity of sound in liquids and solids is greater than in air because the elasticity of liquids and solids as compared with their respective densities are vastly greater than the elasticity of air in relation to its density as stated by Prof. Tyndall on page 76. The amplitude of the vibration is in all cases proportional to the intensity of the sound but is less, other things being equal, in solids and in liquids

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than in air.

It is also a well known fact that ~~the~~ sound is propagated in all directions and that it sets in vibration every body with which it comes in contact, the extent of vibration of the body receiving the impact of the sound depending upon the force or intensity of the sound and the magnitude and material of the body. It is also well known that sounding boards or diaphragms augment the intensity of sound first, because a large surface is set in vibration, thereby setting a larger volume of air in vibration, and second, because the diaphragm or ~~sounding board~~ sounding board being usually thin and unrestrained from vibration throughout the greater portion of its extent is capable of a greater amplitude of vibration. Take any familiar musical instrument for example, such as a banjo. If the "bridge" be removed and the strings be then played upon, the sound is very faint and is audible only for a short distance. Place the bridge in position so that the vibration of the strings is conveyed through the bridge to the parchment which constitutes the sounding board and the sound is amplified many fold and is audible for a considerable distance.

These familiar facts are fully set forth by Prof. Tyndall. I will quote a few detached sentences which when taken in connection with their context show that all of Mr. Amet's "discoveries" are well known facts to all those versed in the elementary principles of acoustics.

"The motion here meant is not, however, that of the nerve as a whole, but of its molecules or smallest particles." (Bottom of page 31.)

"The motion of the pulse must not be confounded with the motion of the particles, which at any moment constitute the pulse. For while the wave moves forward through considerable distances, each particular particle of air makes only a small excursion to and fro. " (Page 33.)

"The motion of sound, like all other motion, is enfeebled by its transference from a light body to a heavy one." (Page 39.)

"The distance through which the air particle moves to and fro, when the sound wave passes it, is called the amplitude of the vibration. The intensity of the sound is proportional to the square of the amplitude. " (Page 41.)

"The action of sound thus illustrated is exactly the same as that of light and radiant heat. They, like sound, are wave motions. Like sound they diffuse themselves in space, diminishing in intensity according to the same law." (Bottom page 43.)

"In regard to sound and the medium through which it passes, four distinct things are to be borne in mind--intensity, velocity, elasticity and density." (Page 74.)

All of Mr. Amet's "curious discoveries" and "curious facts" have been well known for more than a generation.

Mr. Amet says,

"This is my discovery in a nut-shell. It seems to me to operate upon a wholly ~~different~~ different principle from Edison's to-and-fro moving diaphragm and its operating stylus. Edison depends upon bodily to and fro movement in a single direction. I depend on molecular or internal vibration and in every direction."

This is simply word-splitting and has no basis in fact. The reason why Edison uses a diaphragm is simply for the same reason ~~why~~ that a sounding board or diaphragm is used ~~in~~ in all musical instruments, or ~~why~~ that a sounding board is used in an auditorium, and that is, for the purpose of amplifying the sound. In order to render a wave motion

audible it is necessary that there should be a sufficient rapidity of vibration. (Tyndall on Sound, p. 99.) Now if in Edison's phonograph the stylus should be used alone and vibrated sufficiently fast by the sound record a sound would be produced but so faint as to be inaudible for all practicable purposes. In order to render this sound audible it is necessary that some means should be employed for amplifying it. Now in accordance with well known acoustic laws the larger the surface that is set in vibration, and the greater the amplitude of its vibration, and the greater the elasticity of the material employed, the more intense the sound will be rendered. This is shown by the banjo illustration. Consequently Mr. Edison used for his amplifier an ordinary instrumentality for this purpose to wit, a stretched membrane or diaphragm such as is seen in a banjo or a drum. He might have used any other known form of sounding board, such as a thin plate of wood as is to be found in a violin or guitar. It is merely a case of amplifying the vibration of the style. The diaphragm moves bodily to-and-fro simply because it has a great amplitude of vibration. The stiffer the material the less the amplitude of vibration but this may be compensated for by the greater elasticity of the material. Exactly the same principle, and no other, is involved in the defendant's machine. His glass stylus or rubbing point is vibrated by the sinuous sound record just exactly as in the case of the graphophone. The extent or amplitude of this vibration depends entirely upon the varying depth of the sound groove. This vibration is communicated through the glass tube employed

to the sounding board or diaphragm which amplifies the sound in exactly the same manner as in the graphophone and in accordance with the well known principles of acoustics. The molecular vibratory "discovery" of Mr. Amet in this connection is exactly what has always been known to exist under analogous circumstances for many years or as long as the principles of acoustics have been understood. The manner in which the sound is conveyed from the reproducing style along the glass tube in defendant's machine is fully disclosed at pp. 106 to 109 of Tyndall on Sound. A tuning fork mounted on a resonance box operates in accordance with the same well understood law. The movement of the reproducing style or rubbing point corresponds to the movement of the free ends of the tuning fork; the sound is ~~communicated~~ conveyed along the glass tube in defendant's machine just as along the stem of ~~the~~ the tuning fork; and the sound is amplified by the sounding board or diaphragm in defendant's machine in exactly the same way, as far as the principle of operation is concerned, as in the case of the resonance box on which the tuning fork is mounted, (see page 86 of Tyndall on Sound.)

G.M.F. "N.P"

G.M.F. "N.P"

In other words, defendant's apparatus operates in accordance with well known acoustic laws and contains no new principles or discoveries.

I notice from Mr. Amet's affidavit that he is unable to explain why he uses a glass tube instead of a solid glass rod in his machine. A reference to Tyndall on Sound will explain why he gets better results with a glass tube. Prof. Tyndall says, at page 41,

> "This weakening of the sound, according to the law of inverse squares, would not take place if the sound wave were so confined as to prevent its lateral diffusion. By sending it through a tube with a smooth interior surface we accomplish this, and the wave thus confined may be transmitted to great distances with very little diminution of intensity."

The sound from the reproducing point or style is conveyed through the hollow interior of the glass tube in defendant's machine in addition to being conveyed through the glass itself, thus increasing the intensity of the sound.

There remains, therefore, but little more to be said in reference to Mr. Amet's opinions, which are due ~~based~~ upon his apparent ignorance of the fact that all of his theories and "discoveries" have been for many years the well known to all persons having any information concerning the science of acoustics.

G.M.F. "R.P."

Concerning the defendant's reproducing style of glass, which rubs against the record Mr. Amet says,

> "But I protest there is actually no other similarity between the two devices than this. I choose rather to call it the rubbing point."

Even Mr. Amet's phraseology is not new. The Bell & Tainter patent No. 341,214, calls the reproducing style "a rubbing style" in claims 22 and 24; speaks of "rubbing" in claims 23 and 27.

G.M.F. "R.P."

G.M.F. "R.P."

Mr. Amet says "I found that such a vibrator "would work perfectly without anything like a diaphragm "in connection with it" but immediately after he says,

> "The two pieces of wood on my little machine with a bit of rubber tube clamped between them is not intended as a diaphragm, and does not act as such in any sense. This contrivance is only an amplifier,"

n

That is all any sounding board or diaphragm is, simply a device for amplifying a sound. Mr. Amet states that he has found that "almost any porous or cellular structure such as a piece of wood and even to some degree a wad of cotton wool will act as an amplifier". That is to say that Mr. Amet has rediscovered the long well known acoustical fact that some materials are better for use in sounding boards than others, and that the purpose of a sounding board is to amplify the sound. Prof. Tyndall says on page 115, of his text book from which I have quoted:

> "The importance of employing proper sounding apparatus in stringed instruments is rendered manifest by these experiments. It is not the strings of a harp, or a lute, or a piano, or a violin, that throw the air into sonorous vibrations. It is the large surfaces with which the strings are associated, and the air inclosed by these surfaces. The goodness of such instruments depends almost wholly upon the quality and disposition of their sounding-boards."

Consequently when Mr. Amet says he has no diaphragm in his machine but has an amplifier instead he simply makes a distinction without a difference.

The only other reason which Mr. Amet asserts as to why his instrument does not contain the subject matter of the claims in question is because he does not employ any feed screw, his rubbing style being itself moved along by the ~~gr~~ sound groove in the phonogram. In this respect, however, the defendant's machine operates exactly as does the graphophone. Because ~~it~~ in the graphophone, as a matter of fact, the reproducing style is pushed along by the groove in the phonogram and the feed screw simply causes the swinging end of the reproducer to keep up with the reproduc-

ing style. This is necessarily the case since if the reproducing point was pulled along by the action of the screw there would be no effective lateral movement.

These differences, however, even if actually present are wholly immaterial to the present inquiry because no one of the claims in question mentions the feed screw and no one of the claims in the Bell & Tainter patent mentions the diaphragm.

Even Mr. Amet himself is unable to differentiate his machine from claims 24, 36, 37 and 38 of the Bell & Tainter patent.

The affidavit of Mr. Curtis on the question of the embodiment of the subject matter of the claims in question in defendant's machine amounts substantially to a mere restatement of Mr. Amet's conclusions. Mr. Curtis refers to an experiment with a machine wherein the reproducing style was held stationary in a vise while the sound record cylinder itself moved to and from the same, and to the possible substitution in a machine of a solid glass arm instead of a hollow one. Such structures seem to be now immaterial and it will be sufficient to consider them when such machines are put on the market and are claimed to be an infringement of the patents in suit. It would be a work of supererogation to consider them now.

I therefore, am of the opinion expressed in my original affidavit that the defendant's machine embodies the subjects-matter of claims 19, 20, 21, 22, 24, 36, 37 and 38 of the Bell & Tainter patent; and of claim 39 of the Tainter patent.

p

Tainter patent.

Edward Brown

Sworn to and subscribed before me this

Fifteenth day of February, 1896.

Grace M. Finley
Notary Public D.C.

UNITED STATES CIRCUIT COURT
NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY	)	
	)	
-vs-	)	IN EQUITY.
	)	
EDWARD H.AMET.	)	

AFFIDAVIT OF ANDREW DEVINE.

District of Columbia, s.s:

ANDREW DEVINE, being duly sworn says: I am of lawful age, and am a resident of Washington, D.C. I am a stenographer by profession, and am and for about twenty years have been one of the official reporters of the U.S. House of Representatives.

I had seen and heard the Edison tin-foil phonograph when it was first exhibited, and realized that a machine capable of taking down dictations and reproducing them intelligibly would be a valuable aid to stenographers in their business. This is a matter I had frequently discussed with business associates, especially with Mr.James O.Clephane and Mr.John H.White of Washington, the latter being also one of the official stenographers of the House of Representatives.

Pursuing the design of ascertaining, if possible, whether something practical could be done with the Edison machine, Mr.Clephane in the year 1885 wrote to E.H.Johnson, who had charge of Edison's phonograph interests, but learned that

nothing had been done for many years towards developing a practical machine, and that nothing existed which was available for our purpose. Shortly after that we heard of the graphophone, invented by Dr.Bell and Mr.Tainter, and were permitted to examine it. I made a very close study of its construction and operation, and subjected it to severe tests for accuracy, efficiency and general practicability. Finding it perfectly available for the proposed use, a number of these machines were obtained, as soon as they were put on the market, and put in use at the U.S.Capitol, and I have continuously employed such machines in my work from that time to the present. They effected a very great economy in time and money, and a decided gain in accuracy in the work of transcribing the short-hand notes of debates in the House of Representatives. All the reports and proceedings of the House passed through graphophones, their capacity to reproduce accurately any and all kinds of matter being thoroughly demonstrated. From the very first, the machines were a complete practical success, and were, to my knowledge, used by many persons for dictating as well as for correspondence. I have kept myself thoroughly informed of the progress in this art and am I believe familiar in a practical way, with all types of talking-machines that have ever been presented to the public. At the present day, the method of engraving a record in hard material, invented and patented by Dr.Bell and Mr.Tainter, is the only known method whereby sound records can be made for practical uses, or from which immediate reproduction can be had. The art in its ultimate developments up to the present time rests upon this fundemental invention. Among the practical and useful features of the

original graphophone, and which has been an essential part of all graphophones made up to this time, is the construction of the reproducing instrument in such manner that it is absolutely self-adjusting, and when left to itself finds and keeps its place on the record. That feature consists in giving the reproducer freedom of movement so that it can swing laterally, and the tracking of the record is effected by the engagement of the reproducer point in the groove, the reproducer as a whole being allowed to rest freely by its own weight on the record cylinder. The record being in the form of a groove with sloping walls cut in hard material, the adjustment, as well as the guiding of the reproducer are rendered automatic.

I have examined the machine made by the defendant, Amet, in which the reproducer is a long glass rod having a rubbing point or stylus on one end. This apparatus differs in some details of construction from the various forms of machines which have been made under the Bell and Tainter patent, but in respect of the construction specified, whereby the reproducing point is automatically kept in constant contact and with uniform pressure with the record, and whereby it is fed and maintained constantly in the spiral groove, the Bell and Tainter invention is incorporated in the Amet machine without any change, departure, or modification.

For the above specified purpose, the same means are employed with the same results. The early Edison phonograph did not have a self-adjusting reproducer, and I am positive there was no knowledge of such a device prior to the Bell and Tainter patent.

When, after the Bell and Tainter patent, the Edison Phonograph Company put on the market a machine operating on the principle of the Bell and Tainter patent, and making records by cutting in a wax-like material, the reproducer was rigidly held both laterally and radially with respect of the cylinder, and it was provided with an adjusting screw so that the user could adjust it by hand to the record. This necessity for adjustment was a great source of annoyance to and difficulty to the users of those machines, and I have no hesitancy in saying that the self-adjusting feature of the graphophone is an invention of great practical value.

It is plain that if the reproducer of the Amet machine did not rest freely by gravity on the tablet, or record cylinder, and were not pivoted so that it could swing horizontally, the machine would be absolutely inoperative.

Andrew Devine

Sworn to and subscribed before me this 15th day of February, 1896.

Reeve Lewis

Notary Public,

District of Columbia.

IN THE UNITED STATES CIRCUIT COURT

NORTHERN DISTRICT OF ILLINOIS

NORTHERN DIVISION.

American Graphophone Co.)
)
VS.) In equity,
) No. 23986.
)
Edward H. Amet.)

Affidavit of Robert H. Wiles.

State of Illinois)
) ss.
County of Cook)

Robert H. Wiles being duly sworn deposes and says that his age is 45 years, by occupation he is a patent solicitor and mechanical expert; and that he has had a scientific education having graduated in the course in science at Cornell University in 1874 and taken considerable extra work in mathematics and mechanics; that in January 1877 after two years study in the office of the Hon. J. M. Bailey at Freeport, Illinois, he was admitted to the bar of the State of Illinois and for about five years thereafter was engaged in the general practice of law and during this time became interested in inventions and had several clients and acquaintances who were inventors and manufacturers; that he became very familiar with their inventions and the manufacturing processes and machinery in which they were interested and in the latter part of 1891 he began the practice of preparing applications for patents which were successfully prosecuted and his business in this line increased so that within a year

or two he gave up the general practice of law; that since that time he has devoted himself to matters pertaining to inventions and in his business of patent soliciting has prepared and prosecuted a large number of applications and has become very familiar with the reading of drawings and the construction of specifications and claims of patents; that during a number of years last past he has testified frequently as a mechanical expert in patent cases and that he considers himself entirely competent to compare the claims, specifications and drawings of patents for invention and to construe the meaning and scope of patent claims.

Affiant further states with respect to the matters involved in this cause, as follows: I have examined and understand Letters Patent No. 341,214 granted to Bell and Tainter and Letters Patent No. 341, 288 to Tainter, on which I understand the above entitled suit is based, and have particularly examined the subject matter of each of the claims 19, 20, 21, 24, 36, 37 and 38 of said patent No. 341,214 and claim 39 of said patent No. 341,288. I have, moreover, examined the Exhibit Machine called the Graphophone manufactured by the American Graphophone Company and marked "Complainant's Exhibit Complainant's Machine" and understand the construction thereof and have also examined and understand the machine marked "Complain- Exhibit Defendant's Machine", and I have also examined the affidavit of Lewis E. Curtis made in this cause and have examined and understand the United States and British Letters Patent of Thomas A. Edison referred to in said affidavit,

namely United States Patent No. 200,521 of February 19, 1878, No. 201,760 of March 26, 1878, No. 213,544 of March 25, 1879 and No. 227, 679 of May 1880 and British patents No. 2909 of 1877 and 1644 of 1878.

I find described in both of said Letters Patent in suit a reproducing device comprising means for supporting and giving rotary motion to a record cylinder or tablet made of wax or wax-like material in which a record groove has been cut by a recording style, adapted to give sloping form to the sides of the groove, and a movable reproducing style, which latter is supported by means affording free lateral movement of the style along the surface of the cylinder or tablet in a direction transverse to the spiral groove cut by the recording device, so that the style may adjust itself automatically to the said groove and will be moved along the cylinder by its engagement with said groove. This feature of a style having a free lateral motion is specifically set forth in claims 19, 20, 21, and 22 of said patent No. 241,214 and the same feature, combined with a diaphragm which is stationary with respect to a laterally movable style, is covered by claim 39 of patent No. 341,288. Moreover, I find that the said claims do not mention in any way, and do not relate to or include the feed-screw shown in the said patent for bodily shifting or moving the pivot of the style-supporting arm with respect to the tablet or cylinder, but they refer solely to another and distinct feature of construction, namely, the style having a free lateral movement, whereby the said style is adapted to remain automatically engaged with the groove of the record and is

moved along the cylinder by such engagement with said groove. This is the feature of construction which I understand to be covered by the language of the claims above referred to and this construction I find to be embodied in "Complainant's Exhibit Graphophone" and equally in "Complainant's Exhibit, Defendant's Machine."

The difference I observe between the said machines is that in the machine illustrated in the patent, the reproducing style is sustained on a flexibly mounted arm which is quite short with respect to the distance to be traversed by the style in its lateral movement, so that a bodily movement of the support on which said arm is attached is necessary in order to enable the style to traverse the full length of a record cylinder of the kind commonly used,,while in the said defendant's machine the movably supported glass tube forming the pivoted style-carrying arm, is of such length with respect to the distance to be traversed by the style that the style may move the full length of the record without requiring any shifting of the pivotal support of said arm.

The differences above stated are, therefore, in my opinion purely mechanical and have nothing to do with the operation of the particular features constituting the invention set forth in claims above named. In my opinion, therefore, the construction of defendant's exhibit machine with respect to the parts referred to embodies the same substantial features set forth in said claims and constitutes an infringement thereof.

This conclusion is in my opinion fully warranted by the

fact that if a short record cylinder, not longer than the possible swing of the style-carrying arm of complainant's machine, be employed in that machine, then the construction and operation of the parts of that machine will be identical with the construction and operation of the pivoted, glass tube of defendant's machine; it being obvious that the bodily movement of the slide under the action of the feed-screw in complainant's machine is necessary merely because the supporting arm of complainant's machine is very short as compared with the length of the record cylinder, so that a bodily shifting of the pivot of said arm is required in order to keep the arm always in operative position with respect to that part of the cylinder on which it is acting at any one time. In other words, in my opinion, the shifting of the pivotal support for the style carrying arm in complainant's machine is required merely for bringing that pivot opposite the part of the long cylinder on which the style may be operating at a given time and that such shifting of the point has nothing whatever to do with the feeding of the style itself by engagement of the style with the groove, which is entirely automatic.

My views with respect to the matters above referred to will be made more clearly by the examination of the accompanying sketches, Figures 1, 2 and 3. In Figure 1, A indicates a short record cylinder such as would be formed by cutting a piece half an inch long from the record cylinder of complainant's machine and the line B indicates the style-carrying arm

having at its end the style b which rests on the cylinder. C in this case indicates the pivot about which the arm B is free to turn as the style is moved transversely of the grooves in the rotation of the latter. Said Figure 1, therefore, exactly represents the construction illustrated in complainant's machine and called for by the claims of the patent, moreover, it exactly illustrates the construction present in defendant's machine.

In Figure 2, A^1 represents a long record cylinder such as is used on complainant's machine and B^1 a style carrying arm of the same length as that shown in Figure 1. Said arm B^1 carries a style b' and is mounted on a pivot C'. With a style-carrying arm of this length it is obviously impossible to traverse the full length of the cylinder A', but the proper operation of the lever in the manner disclosed in the patent may be secured by shifting the pivot C' successively to the points c, c^1, c^2, c^3, c^4 and c^5 with the obvious result of covering the entire length of the cylinder without affecting in any way the action of the freely moving style in those parts or sections of the cylinder opposite said points c, c^1, c^2, c^3, c^4, and c^5 and which are defined by the dotted lines a a a in the sketch; each of said sections corresponding with the short cylinder a^1 of Figure 1.

The same result may be obtained by giving a uniform motion to the pivot C so that this style shall always stand nearly at right angles to the axis of the cylinder, and this is what is done in practice in complainant's machine.

In Figure 3 I have shown a record cylinder A^2 like that shown in Figure 2 in connection with a style supporting arm B^2 which is mounted on a pivot C^2 located opposite the cylinder at such distance therefrom that the style $\underline{b}^2$ carried by the arm B will remain constantly in operative relation with the record cylinder when the free end of the arm is swung from one end of the cylinder to the other. This construction is identical with that illustrated in Figure 1, differing therefrom only by reason of the fact that the arm is made longer to correspond with the length of the cylinder. The differences between this construction, which illustrates defendant's machine, and that shown in complainant's machine are entirely matters of mechanical arrangement, having nothing to do with the novel feature of operation referred to. This will also be made clear by observation of the fact that if the pivot C^2 be moved to the point marked $\underline{c}^2$ then the lever arm will be so shortened that it can move only through the short arc from A^1 to A^2 without reaching a point off the cylinder where the style would no longer properly operate or where said style would be no longer substantially perpendicular to the surface of the cylinder and in position to properly engage the record grooves in the same, so that it would become necessary to move said pivot $\underline{c}^1$ in a line parallel with the cylinder to the point $\underline{c}^3$ in order to secure a result with a short supporting arm mechanically equivalent to that obtained by the long supporting arm.

In my opinion therefore, the long supporting arm or glass tube of defendant's machine is merely a mechanical ex-

pedient to take the place of the short arm with its traversing screw of complainant's machine and as far as the subject matter of said claims 19 and 20 is concerned the mechanical equivalent of such short arm with its traversing screw, and that such traversing screw is merely an additional feature required where a short arm is used and has no essential relation to the novel feature of the claims referred to, namely, the free lateral movement of the style permitting it to automatically follow the spiral groove cut in the record cylinder. This conclusion is fully sustained by actual experiment with the Graphophone exhibit, which I find to be fully operative, within the limits of the swing of the style-carrying arm, when the slide is disengaged from the feed screw and held immovable.

My conclusion in this respect is in no wise affected by the fact that in complainant's machine a diaphragm is mounted on the style-carrying arm, so as to move with the same, while in the defendant's machine the part corresponding with the said diaphragm is stationary, for the reason that the diaphragm in itself is not made an element in the claims referred to and the presence or absence of said diaphragm does not in any way affect or change the operation of the parts named in said claims, namely, the style and means by which it is movably supported.

I also find the "universal joint" called for by claim 21 of said patent is also present in said "Exhibit Defendant's Machine", because the glass tube of the latter is loosely connected with its pivot stud, so that its free end which carries the style, is adapted to swing toward and from, as well as laterally with respect to, the surface of the record

cylinder.

With respect to the Tainter patent No. 381,288 I find therein described a construction in which the reproducer is provided with a flexibly mounted style which is movable sidewise independently of the diaphragm or sonorous body. This construction is described in claim 39 of this patent and I find it exactly reproduced in defendant's machine wherein the style forms an intergral projection on a glass tube which latter is pivotally connected with the part which forms a sounding board or diaphragm. The sidewise movement of the reproducing style set forth in this patent is intended to secure the same result as that obtained by the swinging arm of the Bell and Tainter patent, namely, it permits the style to follow automatically the grooves of the record and in my opinion said Tainter patent with respect to the claim referred to is infringed equally with the Bell and Tainter patent.

Referring to said affadavit of Lewis E. Curtis, I do not agree with the statement of the said Curtis that the said United States Patent to Edison of March 26th, 1878 shows and describes the same mechanical devices that are set forth in claims 19, 20, 21, and 22 of Complainant's said Bell and Tainter Patent No. 341,214, for the reason that the said claims of the Bell and Tainter patent refer to a reproducing point which is free to move laterally with respect to the grooves formed in the wax record cylinder, so that it is free to follow and adjust itself automatically to the said grooves, while said prior Edison patent illustrates no construction

embracing a style which is capable of free lateral movement but, on the contrary, the style or reproducing point therein shown is attached to a flat supporting spring adapted to permit movement of the style toward and from the face of the record tablet or cylinder but which is not capable of lateral bending or deflection and is so secured as to prevent lateral movement of its free end or the style thereon. I believe the said affidavit of Curtis to be also in error in respect to the said prior Edison patent of May 18, 1880, wherein the style is shown as supported on a pivoted arm, for which I find the pivotal connection of the arm with its support, shown in said patent, to be such as to permit the free end of the arm, which carries a style, to be moved toward and from the record tablet or cylinder, but that it is so constructed as to prevent any sidewise or lateral movement of the style and the said pivotal connection is neither intended nor adapted to afford such lateral movement. Moreover, where a spring support is shown in said Edison United States Patents the spring is, in every instance, a flat spring which is incapable of being bent edgewise in a manner to permit lateral movement of the style attached thereto.

I also find that the said affidavit of Curtis is erroneous and misleading in its reference to said prior Edison patents, for the reason that on page 15 of said affidavit he speaks of the supporting spring as being secured by a ~~swinging~~ "screw or pivot", a statement which I believe is not warrented by anything contained in said patents, as I find nothing in said patents calling for the use of a pivot, but on the con-

trary find that the spring referred to by Curtis in his affidavit is in every instance secured by a holding screw obviously designed to maintain the laterally stiff spring rigidly in place, and such holding screw resembles a pivot neither in structure or function. I further find that said Curtis says in his affidavit that provision is made in said Edison patent of 1880 for lateral movement of the style there shown by means of a "loose pivoted lever". I find no warrent in the patent for this statement, as the lever illustrated and described therein is pivoted so as to swing toward and from the face of the record tablet or cylinder only, no provision is shown or indicated for lateral movement of the free end of said lever and it is not a "loose" lever under any proper or correct usage of that term.

I have also examined Figures 15, 19 and 27 of said British patent No. 1644 of 1878 referred to in said affidavit of Curtis and find in said Figures 15 and 19 a reproducing stylus style attached to a flat spring which so supports the style as to permit its movement toward and from the face of the record tablet or cylinder and which prevents any lateral movement of the style, because the spring is itself laterally stiff or unyielding and is held in place by a fastening screw, which is not a pivot and is plainly intended to hold the spring rigidly in place. With respect to Figure 27 of said British patent that Figure in my opinion illustrates no practical means for transmitting vibratory motion to a diaphragm from a phonograph record and therefore has no bearing on the

subject matter of Complainant's said patents.

I also disagree with the statement contained in line 22 of page 10 of said Curtis affidavit, wherein, in referring to the statement of the patent with respect to the material to be used for making the record, he quotes from the said patent, No. 200,521, as follows: "soft paper saturated or coated with paraffine or similar material [or] with a sheet of metal foil on the surface thereof to receive the impression from the indentation point." The said word "or" which is inserted in brackets in said affidavit is not found in the original patent and its insertion is not in harmony with the meaning of the actual language of the patent and is calculated to produce an erroneous interpretation of said patent. I find that the said patent contains no hint or suggestion of the use of paper coated with paraffine, except as a backing for the metal foil which is described in said patent as the sole material intended to be used for the making of the record, and the implication that said prior Edison patent suggests the use of wax in the manner proposed by the Bell and Tainter patent, clearly arising from the interpolation by said Curtis of the word "or", is entirely without foundation.

And further affiant saith not.

Robert H. Wiles.

SUBSCRIBED AND SWORN TO BEFORE ME

this the 17th day of February, 1886.

William Hall

Notary Public.

United States Circuit Court
Northern District of Illinois

American Graphophone Company
vs
Edward H. Amet
} In Equity

Affidavit of William S. Bates

State of Illinois }
County of Cook } ss

William S. Bates of lawful age of Chicago Illinois patent expert and Mechanical Engineer being sworn deposes and says.

I have known Lewis E. Curtis who has made an affidavit in this cause for many years. Mr Curtis is a mechanical engineer and designer of machinery of great ability and high standing. He is thoroughly competent to understand and explain mechanical devices and to read drawings. He has been called upon frequently to testify as a mechanical expert in patent causes, and there are few who excell him in the clear concise and forcible manner in which he expresses and maintains an opinion upon such matters. I do not know whether he may or may not have taken a college degree as a mechanical engineer; but I do know that in his work he exhibits no lack of the ability such a degree might imply.

I have read Mr Curtis affidavit, and have examined the Aud- machine, and the phonograph. I agree with him. The Aud- machine operates wholly by molecular vibration as contradistinguished from the diaphragm operation of the Edison device and that of his imitator who build the so called graphophone.

It is perfectly clear also that in the old Edison machine, for example as shown in his English patent No 1644 of 1878, any of the reproducing styles which are loosely enough mounted to respond to the undulations of a sound record are also loose or flexible enough to laterally yield sufficient to compensate for irregularities or inequalities between the thread of the master screw and the groove or thread on the sound record. Figure 27 of this English patent shows clearly a stylus mounted on a universal joint, which is equally capable of movement in every direction. The flexible diaphragm constitutes the universal joint; in this instance just as it does in those cases familiar to mechanics where a diaphragm is employed to make a universal joint between the ends of shafting which are to be flexibly connected.

Wm S. Bates

Subscribed and sworn to before me this 19th day of February, A.D. 1896.

A. W. Mundy
Notary Public

UNITED STATES CIRCUIT COURT

NORTHERN DISTRICT OF ILLINOIS.

AMERICAN GRAPHOPHONE COMPANY)
)
vs.)
)
E D W A R D H. A M E T)

GROSSCUP J.,

The bill is to restrain the infringement of Letters Patent No. 341,214, issued to Bell & Taintor May 4, 1886, and also Letters Patent No. 341,288, issued to S. Taintor of the same date. The first patent is for an improvement in recording and reproducing speech and other sounds; and the second for an improvement in apparatus for recording and reproducing sounds or sonorous vibrations.

The defendant contests the validity of complainant's patents and denies infringement.

Bell & Taintor lay no claim to having conceived the idea of a mechanism whereby speech or sound could be recorded and reproduced. Much thought and experimentation, before their patents were completed, were expended upon the general conception of such an instrument. But the fact remains that prior to their graph ophone, the conception of a phonograph had never been mechanically worked out to the extent of practical perfection. The grapho phone, indeed, seems to have taken the place of all previous mechanisms, and to have advanced, by a very large space, the art of recording and reproducing speech and sounds.

All graphophones, or phonographs, are based upon the natural law that speech or sound impart to the surrounding air

vibrations of a form and character exceptional to the peculiar speech and sound. Such air vibrations, pressing upon a diaphragm, set it into vibrations, either bodily or molecularly, corresponding to the air vibrations. The same form of air vibrations will always produce the same form of diaphragm vibrations. Conversely, the same form of diaphragm vibrations will reproduce the same form of air vibrations. The form of diaphragm vibrations, therefore, which, through the medium of the air vibrations, are the result of a particular speech or sound will, themselves, when the operation is inverted, reproduce the like speech and sound.

It was not difficult at the time of complainants' patent to communicate air vibrations into their corresponding diaphragm vibrations, or diaphragm vibrations into their corresponding air vibrations, that was, practically, the telephone. The problem presented was to deposit in some substance these diaphragm vibrations where, at will, they might be taken up and imparted to another diaphragm which would transform them into air vibrations. The chief mechanical problem before the inventors was the making of a suitable and practicable substance of deposit or record.

The complainants accomplished this by providing as a substance for the record a compound of beeswax and paraffine slightly cohesive and amorphous. Upon this was traced, by means of a cutting style, connected with the sound-receiving diaphragm and vibrated by it, grooves whose vertical undulations corresponded with the vibrations imparted. The style, cutting these grooves, removed all the material necessary to be displaced, and thus left the surface and density of the substance as it was before, except for the grooves. These grooves were cut with sloping walls into which another style, corresponding with the first, would easily fit. This second style, resting upon these grooves by gravity and being of the proper weight, doubtless ascertained by experimentation, and being moved along the grooves by mechanism provided for that purpose imparted to a second diaphragm the vibrations incident to the elevations and depressions of the bottom of the groove. The effect of the whole is to give to the second diaphragm a series of vibrations so nearly like those of the first, ~~or reproducing one~~, that the air waves thereby set in motion will correspond very nearly to the air waves which, in the first instance, set the producing diaphragm in motion.

In the view I take of the case it is unnecessary to

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go in detail into the other and subsidiary features of the mechanism which were calculated simply to make it more effective.

Claim 22 is as follows:-

" The combination, with a grooved tablet or other body having a sound-record formed therein, of a reproducer having a rubbing-style loosely mounted, so that it is free to move laterally, and thus adjust itself to the groove, substantially as described."

And claim 24 is as follows:-

The combination, with a sound record formed in a wax or a wax-like material, of a reproducer having a rubbing style for receiving sonorous vibrations from said record, substantially as described."

It will be seen that in order to follow the groove accurately the reproducer must be loosely mounted, and this is accomplished by the universal joint described in the patent.

Much stress was laid by counsel for complainants upon the patentability of the adaptation of this universal joint to the purpose of a graphophone. If the validity of the patent depended upon this contention, I would be disposed to hold against it, for I can see nothing novel about the joint except its new use, and such adaptation to new use is not, in my judgment, patentable invention.

But while this element, separately considered, is not invention, the combination which enbraces it, in my judgment, is. Such combination is the mechanical means whereby the art of recording and reproducing speech and sounds is first made practically effective. To deny to it the dignity and quality of invention would be to deny the patentability of every first great mechanical success.

The substance upon which the record is cut and the

and the reproducer thus loosely mounted, by which it is enabled to follow the undulations of the groove, together, constitute an effective portion of the mechanism; either without the other would be useless for the purpose of a graphophone or phonograph; together, they bring about a successful result. They therefore constitute a patentable combination.

The defendant's device, in the essential characteristic of a loose joint, so as to enable the style to follow the groove of the record, is like the complainant's reproducer. It is intended to perform the function of imparting to a diaphragm the vibrations consequent upon the undulations ~~resting~~ in this groove. Without the complainant's record, the defendant's device would be useless; it is never used except in connection with complainant's record. In the practical use therefore, of defendant's device, one of the elements of complainant's combination is actually and necessarily employed.

It appears, however, that these records are sold by the complainant on the open market, and it is contended that such sale releases this element of the combination from the monoply of the patent.

I do not concur in this view. To make the graphophone more widely useful, the complainants make many records embodying music, speech, and other sounds, and distribute these, by sale, to the users of the phone. But the record thus distributed remains an integral part of the combined mechanism. It is not a product of the machine, but still a part of it. It is not unusual in many mechanisms that some element of their combination must be more frequently renewed than others. The sale of such parts, segregated from the machine, is only the replenishing of the combination by a substitution of a new element for the one worn out.

Such action does not break the patentability of the combination.

So, in this combination, substitution by sale of one or many records for another, though not due to the same necessity, ought to receive the same consideration. The keys of a piano may be replaced, without releasing the combination of which the keys are an element, from the monoply of a patent. I can see no reason why the record of a graphophone may not, though for a different purpose, be likewise replaced without breaking up the validity of the combination.

Inasmuch, therefore, as defendant's device is only to be used in connection with one of the elements of complainants' patentable combination, I am of the opinion that it infringes such combination as expressed in claims 22 and 24 already quoted.

A decree will, therefore, be entered for an injunction and accounting.

Poole & Brown
Solrs for Complt.
Munday, Evarts & Adcock
Solrs for Deft.

trade-mark not having been established by adjudication, and being now called in question, the doubt is enough to authorize the court, in its discretion, to refuse a temporary injunction, and leave the question for determination upon the final hearing.

AMERICAN GRAPHOPHONE CO. v. AMET.[1]

(Circuit Court, N. D. Illinois. April 6, 1896.)

1. PATENTS FOR INVENTIONS—PATENTABILITY—COMBINATION—GRAPHOPHONE.
Letters patent, No. 341,214, issued to Bell & Taintor, May 4, 1886, for an improvement in recording and reproducing speech and other sounds, consisting of the combination with a grooved tablet, or other body, having a sound record formed therein, of a reproducer having a rubbing style loosely mounted so that it is free to move laterally, and thus adjust itself to the groove, are not void for want of invention.

2. SAME—INFRINGEMENT.
Such patent is infringed by a device in the essential characteristic of a loose joint, so as to enable the style to follow the groove of the record, and only used in connection with a sound record made by the patentee, since in the practical use of such device one of the elements of said patented combination is actually and necessarily employed.

3. SAME—ABANDONMENT—SALE OF PART OF COMBINATION.
The sale of such sound records by the patentee, in the open market, apart from the rest of the machine, does not release that element of the patented combination from the monopoly of the patent.

In Equity.

Suit for injunction by the American Graphophone Company against Edward H. Amet.

Poole & Brown and Pollok & Mauro, for complainant.
Munday, Evarts & Adcock, for defendant.

GROSSCUP, District Judge. The bill is to restrain the infringement of letters patent No. 341,214, issued to Bell & Taintor, May 4, 1886, and also letters patent No. 341,288, issued to S. Taintor, of the same date. The first patent is for an improvement in recording and reproducing speech and other sounds; and the second, for an improvement in apparatus for recording and reproducing sounds, or sonorous vibrations. The defendant contests the validity of complainant's patents, and denies infringement.

Bell & Taintor lay no claim to having conceived the idea of a mechanism whereby speech or sound could be recorded and reproduced. Much thought and experimentation, before their patents were completed, were expended upon the general conception of such an instrument. But the fact remains that, prior to their graphophone, the conception of a phonograph had never been mechanically worked out to the extent of practical perfection. The graphophone, indeed, seems to have taken the place of all previous mechanisms, and to have advanced by a very large space, the art of recording and reproducing speech and sounds. All graphophones, or phonographs, are based upon the natural law that speech or sound impart to the surrounding air vibrations of a form and character exceptional to the peculiar

[1] Petition for rehearing pending.

speech and sound. Such air vibrations, pressing upon a diaphragm, set it into vibrations, either bodily or molecularly, corresponding to the air vibrations. The same form of air vibrations will always produce the same form of diaphragm vibrations. Conversely, the same form of diaphragm vibrations will reproduce the same form of air vibrations. The form of diaphragm vibrations, therefore, which, through the medium of the air vibrations, are the result of a particular speech or sound, will themselves, when the operation is inverted, reproduce like speech and sound. It was not difficult, at the time of complainant's patent, to convert air vibrations into their corresponding diaphragm vibrations, or diaphragm vibrations into their corresponding air vibrations. That was practically the telephone. The problem presented was to deposit in some substance these diaphragm vibrations, where, at will, they might be taken up and imparted to another diaphragm, which would transform them into air vibrations. The chief mechanical problem before the inventors was the making of a suitable and practical substance of deposit or record. The complainants accomplished this by providing, as a substance for the record, a compound of beeswax and paraffine, slightly cohesive and amorphous. Upon this was traced, by means of a cutting style, connected with the sound-receiving diaphragm, and vibrated by it, grooves whose vertical undulations corresponded with the vibrations imparted. The style, cutting these grooves, removed all the material necessary to be displaced, and thus left the surface and density of the substance as it was before, except for the grooves. These grooves were cut with sloping walls, into which another style, corresponding with the first, would easily fit. This second style, resting upon these grooves by gravity, and being of the proper weight, doubtless ascertained by experimentation, and being moved along the grooves by mechanism provided for that purpose, imparted to a second diaphragm the vibrations incident to the elevations and depressions of the bottom of the groove. The effect of the whole is to give to the second diaphragm a series of vibrations so nearly like those of the first that the air waves thereby set in motion will correspond very nearly to the air waves which, in the first instance, set the producing diaphragm in motion. In the view I take of the case, it is unnecessary to go in detail into the other and subsidiary features of the mechanism, which were calculated simply to make it more effective. Claim 22 is as follows:

"The combination, with a grooved tablet, or other body, having a sound record formed therein, of a reproducer having a rubbing style loosely mounted, so that it is free to move laterally, and thus adjust itself to the groove, substantially as described."

And claim 24 is as follows:

"The combination, with a sound record formed in a wax, or a wax-like material, of a reproducer having a rubbing style for receiving sonorous vibrations from said record, substantially as described."

It will be seen that, in order to follow the groove accurately, the reproducer must be loosely mounted, and this is accomplished by

the universal joint described in the patent. Much stress was laid by counsel for complainants upon the patentability of the adaptation of this universal joint to the purpose of a graphophone. If the validity of the patent depended upon this contention, I would be disposed to hold against it, for I can see nothing novel about the joint, except its new use; and such adaptation to new use is not, in my judgment, patentable invention. But while this element, separately considered, is not invention, the combination which embraces it, in my judgment, is. Such combination is the mechanical means whereby the art of recording and reproducing speech and sounds is first made practically effective. To deny to it the dignity and quality of invention would be to deny the patentability of every first great mechanical success. The substance upon which the record is cut, and the reproducer thus loosely mounted, by which it is enabled to follow the undulations of the groove, together constitute an effective portion of the mechanism. Either, without the other, would be useless for the purpose of a graphophone or phonograph. Together they bring about a successful result. They therefore constitute a patentable combination. The defendant's device, in the essential characteristic of a loose joint, so as to enable the style to follow the groove of the record, is like the complainant's reproducer. It is intended to perform the function of imparting to a diaphragm the vibrations consequent upon the undulations in this groove. Without the complainant's record the defendant's device would be useless. It is never used except in connection with complainant's record. In the practical use, therefore, of defendant's device, one of the elements of complainant's combination is actually and necessarily employed.

It appears, however, that these records are sold by the complainant on the open market, and it is contended that such sale releases this element of the combination from the monopoly of the patent. I do not concur in this view. To make the graphophone more widely useful, the complainants make many records, embodying music, speech, and other sounds, and distribute these, by sale, to the users of the phone. But the record thus distributed remains an integral part of the combined mechanism. It is not a product of the machine, but still a part of it. It is not unusual, in many mechanisms, that some elements of their combination must be more frequently renewed than others. The sale of such parts, segregated from the machine, is only the replenishing of the combination by a substitution of a new element for the one worn out. Such action does not break the patentability of the combination. So, in this combination, substitution by sale of one or many records for another, though not due to the same necessity, ought to receive the same consideration. The keys of a piano may be replaced without releasing the combination of which the keys are an element from the monopoly of a patent. I can see no reason why the record of a graphophone may not, though for a different purpose, be likewise replaced without breaking the validity of the combination. Inasmuch, therefore, as defendant's device is only to be used in connection with one of the elements of complainant's patentable combination, I am of the opin-

ion that it infringes such combination as is expressed in claims 22 and 24, already quoted. A decree will therefore be entered for an injunction and accounting.

For decree, see 74 Fed. 1008.

EXCELSIOR ELEVATOR GUARD & HATCH COVER CO. v. FOOTE et al.

(Circuit Court, S. D. New York. April 24, 1896.)

PATENTS—INVENTION—ADAPTATION OF EXISTING DEVICES—HOISTWAY COVERS.

The Fraser patent, No. 278,528, for means for closing and controlling hoistway covers, consisting of a combination of a number of doors, a cord or chain, a number of catches, and a connection between the catch of one door and an adjacent door, so that the closing of the latter will release the former, and admit of its closing, *held* void, as disclosing only mechanical skill in modifying and adapting pre-existing devices; and, even if patentable, *held* not infringed.

Lawyer & Edwards, for complainant.
S. O. Edmonds, for defendants.

TOWNSEND, District Judge. The complainant herein alleges infringement of the first claim of its patent, No. 278,528, for means for closing and controlling hoistway covers, granted to Daniel Fraser May 29, 1883, which claim is as follows:

"(1) The combination, with a number of hinged doors and a cord or chain for opening and closing them, of a number of catches for engaging with the doors when opened, and serving to hold them open independently of the cord or chain, and a connection between the catch of one door and an adjacent door, so that the closing of the last-mentioned door will effect the release of the other door from its catch, and admit of its closing, substantially as specified."

The chief defenses are lack of patentable novelty and denial of infringement. The patented improvement relates to devices for automatically closing elevator doors, hinged on one side of the elevator shaft, and opened and closed by cords or chains operated with pulleys, and having catches to engage said doors when opened. The prior art, as illustrated in patent No. 84,387, granted February 24, 1868, and reissued April 29, 1873, to James D. Sinclair, showed every element of the claim in suit except the fourth, said "connection between the catch of one door and an adjacent door."

The president of the complainant company admits that, long prior to the alleged invention of Fraser, he sold an apparatus in which each catch was operated by hand by means of a separate rope. What Fraser did was to substitute for the operation of said catches by hand their automatic operation by means of a rope connection between each door and the next succeeding catch, so that, as the first door closed, said rope caused the succeeding catch to disengage from its door, and to permit it to descend. In this way a successive automatic closing was accomplished. Patent No. 261,286, granted July 18, 1882, to Samuel W. Willard, showed, in a somewhat unwieldy contrivance, the idea of so connecting such hatchway doors that the operation of opening one of the doors caused another door on another floor to be automatically opened. Other devices in this art

HUNT et al. v. HOWES et al.

(Circuit Court of Appeals, Fifth Circuit. April 14, 1896.)

Dissenting opinion. For majority opinion see 74 Fed. 657.

BOARMAN, District Judge (dissenting). The two opinions already filed in this cause are so extended that I do not care to elaborate my views. I dissent from the original decision of the court, the opinion filed therein, and the opinion filed in the application for rehearing. The fact is the defect in jurisdiction was not discovered by or known to the parties, their counsel, or the judge of the court below. It was only discovered after the cause had been brought to this court by new counsel employed in this city by plaintiff in error, who suggested the matter of jurisdiction to the court, without which, perhaps, the defect would not have been discovered even in this court.

AMERICAN GRAPHOPHONE CO. v. AMET.

(Circuit Court, N. D. Illinois. April 6, 1896.)

Decree, May 4, 1896. For opinion see 74 Fed. 789.

This cause came on to be heard on the 20th of February, 1896, on pleadings and proofs, and was argued by counsel both for complainant and for the defendant; and the pleadings and proofs, as well as the briefs of counsel, having been fully considered, and the court being fully advised in the premises, it is hereby ordered, adjudged, and decreed as follows: That the complainant, the American Graphophone Company, a corporation organized under the laws of West Virginia, is sole and exclusive owner of letters patent Nos. 341,214 and 341,288, each bearing date of the 4th of May, 1886, and being for new and useful improvements in recording and reproducing speech and other sounds, and an apparatus therefor, as set forth in the bill of complaint; that letters patent No. 341,214 are good and valid so far as their claims are embodied in claims 22 and 24, and so far as they embody claims of a combination, the elements of which are (a) a grooved tablet, or other body, having a sound record formed therein, substantially as described in said letters patent; (b) a reproducer having a rubbing style loosely mounted, so that it is free to move laterally, substantially as described in said letters patent. The court further finds that any device which combines the reproducer described in claims 19, 20, 21, 22, or 24 of said patent, with the grooved tablet or other body having a sound record as described in said patent, and especially in claims 22 and 24, is an infringement of complainant's patent No. 341,214. It is further ordered, adjudged, and decreed that the defendant, by the manufacture and sale and use of talking machines marked "Amet's Talking Machine," and identified as "Complainant's Exhibit Defendant's Machine," is an infringer of complainant's patent, and complainant is therefore entitled to recover damages and profits for all infringements by said defendant in the particulars pointed out. Except in the particulars pointed out in this decree, as above stated, the court does not pass upon the validity of the complainant's patents. It is further ordered, adjudged, and decreed that the defendant, Edward H. Amet, his counselors, attorneys, solicitors, trustees, agents, clerks, employés, servants, and workmen, and each and every of them, be, and they are hereby, enjoined for the remainder of the term of the life of said letters patent from further infringing the same, and from manufacturing or causing to be manufactured, selling or causing to be sold, using or causing to be used, the said or any talking machines, or any part or parts thereof, so containing or embodying the said invention, and that the complainant recover from the said defendant, as well, the damages sustained in and by reason of said infringements, as the profits, amounts, and savings made and realized by the defendant thereby, together with the costs herein to be taxed, and that the cause be referred to Henry W. Bishop, a master in chancery of this court, to take, state, and report the account of damages and profits, under and in accordance with this decree.

END OF CASES IN VOL. 74.

IN THE CIRCUIT COURT OF THE UNITED STATES,

NORTHERN DISTRICT OF ILLINOIS,

NORTHERN DIVISION.

American Graphophone Co.)
vs.
Edward H. Amet

In Chancery,
Gen. No. 23986
Term No. 712

N O T I C E.

Messrs. Munday, Evarts & Adcock,

Solicitors for Defendant,

Marquette Building, City.

Gentlemen:

Confirming the verbal notice at 9:20 o'clock this morning to your Mr. Adcock, we herewith withdraw the notice of motion to apply to Judge Showalter at 9:30 A.M. today to enter an interlocutory decree, in view of the order entered by Judge Grosscup on Monday last, in substance as follows: That pending the settlement of the decree a preliminary injunction may issue unless the defendant file a bond in the sum of Three Thousand Dollars, with sureties to be approved by the Clerk, to account to complainant for profits and damages.

We herewith give you notice that unless by 11 o'clock on Monday, April 13th, the defendant shall file his bond in accordance with Judge Grosscup's order, we will have the

Clerk issue the priliminary injunction directed by said order, and that as soon as Judge Grosscup retruns to Chicago, which we understand will not be until the 20th inst., we will, upon due notice to you, ask him to enter the usual interlocutory decree.

Chicago, April 9th, 1896.

Solicitors for Complainant.

Service of the above notice accepted and copy thereof received this ninth day of April, A. D., 1896.

Solicitors for Defendant.

American Graphophone Co. } In Equity
vs. } No 23,986.
Edward H. Amet

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A B Co.
vs.
Leeds, White & Badin

UNITED STATES CIRCUIT COURT,

For the Northern Division of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY,	:	In Equity,
vs.	:	No. 23,986.
EDWARD H. AMET.	:	

To

Messrs. Poole & Brown,
Complainant's Solicitors.

And

Messrs. Munday, Evarts & Adcock,
Defendant's Solicitors.

TAKE NOTICE that on the affidavits of George E. Tewksbury, William E. Gilmore and Richard N. Dyer, with copies of which you are herewith served, and the exhibit record in the New Jersey cases referred to therein, and upon the record, proceedings and exhibits at final hearing in this suit, I shall, as amicus curiae, move this Honorable Court, or one of the Judges thereof, at the Court Rooms in the Post Office Building, Chicago, on the day of June, 1896, at the opening of the Court on that day, or as soon thereafter as counsel can be heard, to set aside the decree rendered in this case or to substitute therefor an order for preliminary injunction, and to suspend further proceedings in this case until the decision of the U. S. Circuit Court for the District of New Jersey in the suits of this complainant against the United States Phonograph Co. et al and the Edison Phonograph Works, and for such other and further relief as to the Court may seem meet.

Chicago, June 1896.

To the Solicitors for Complainant and Defendant:
The exhibit record in the New Jersey cases referred to in the affidavit of Richard N. Dyer served upon you herewith, may be inspected at my office during the usual office hours.

NOTARY PUBLIC, KINGS CO.
Certificate filed in New York Co.

UNITED STATES CIRCUIT COURT,
For the Northern Division
Of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY, vs. EDWARD H. AMET.	In Equity, No.23,986.

State of New York)
: ss:
County of New York)

RICHARD N. DYER, being duly sworn, deposes and says as follows:

I am an attorney and counsellor at law, doing business in New York City, and have, since the spring of the year 1893, conducted the defence of various suits brought by the complainant on the patents here in suit. Among such suits are two brought in the United States Circuit Court for the District of New Jersey entitled as follows: "American Graphophone Company vs. The United States Phonograph Company, Victor H. Emerson and George E. Tewksbury" and "American Graphophone Company vs. Edison Phonograph Works". The records in these two cases have been completed and are now being printed by the Clerk of the Court, and the hearing will undoubtedly be had either before the summer vacation or directly thereafter. I submit herewith a printed copy of the record in these two cases so far as it has been furnished me by the Clerk of the Court, and identify the same by marking it "Exhibit Record in New Jersey Cases", part 1 to part 6 inclusive.

Our firm has undertaken to defend all suits brought upon the graphophone patents, and that fact I believe is generally known in the talking machine business. Among other suits on these patents which we undertook the defence of were

those brought against Thomas R. Lombard and Edwin S. Gresser of Chicago, Ill. These suits are undoubtedly known to the talking machine trade in Chicago. Notwithstanding this fact, neither myself nor my firm was communicated with by the defendant Amet in the present case, and the suit was carried forward to a decree without our knowledge. If we had been given the opportunity, we would have undertaken the defence and would have carried it on at the expense of our client, Mr. Edison. In the cases in which we have undertaken the defence, nothing has been done to press the cases on their merits by the complainant, the tacit understanding between ourselves and complainant's counsel being that the prosecution of the other suits on their merits should not be actively undertaken until the cases in New Jersey have been disposed of. If we had undertaken the defence of the Amet suit, I have no doubt the case would only have proceeded to an issue on the pleadings, and the taking of testimony would have been postponed until after the new Jersey cases were disposed of.

Having heard that a decision on final hearing had been made by the Court in this case, and that Messrs. Munday, Evarts & Adcock represented the defendant, we telegraphed Messrs. Munday, Evarts & Adcock on April 24, 1896, as follows:

> "We are attorneys for Edison re phonograph cases. Kindly mail us todaycopy your record and brief in Amet case."

In reply we received a copy of defendant's record and brief, and also a letter from Messrs. Munday, Evarts & Adcock dated April 24, 1896, containing the following explanation:

> "The case came up first on a motion for preliminary injunction. After spending nearly a day hearing the motion, the Court denied the injunction without leaving the bench or delivering any opinion. At the solicitation of Mr. Maure, the Court, upon the denial of the injunction and after refusing to require the defendant to give bond, was about to enter an order for a speedy trial and for closing the proofs within sixty days. Owing to Mr. Amet's lack of means financially to bear the expense of counsel and expert witnesses in a patent suit pushed to final

hearing within sixty days, we, after consulting a moment, offered in Court to go final hearing on the affidavits used on the motion in lieu of testimony; and this Mr. Maure consented to after stipulating that he should have the right to file rebuttal affidavits. And the case was therefore tried on final hearing on affidavits merely."

Richard N. Dyer.

Subscribed and sworn to before me :
:
this 24th day of June, 1896. :

Eugene Conran,

(Seal) Notary Public,

Kings & N.Y. Counties.

UNITED STATES CIRCUIT COURT,

For the Northern Division of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY	In Equity,
-vs.-	No. 23,986.
EDWARD H. AMET.	

State of New York)
: ss:
County of New York)

RICHARD N. DYER, being duly sworn, deposes and says as follows:

I have already made an affidavit in this case.

I received to-day from the Patent Office printed copies of three patents granted June 23, 1896, to Edward H. Amet of Waukegan, Ill., assignor of one-half interest to Charles Dickinson of Chicago, Ill., the inventions covered by these patents being improvements in phonographs or graphophones, which improvements I understand from a comparison of the patents themselves with the description of the Amet machine found in the affidavits in this case used on final hearing, to be in part at least those included in the Amet machine upon which the present suit was brought. These patents confirm the statements made in the affidavits of Messrs. Tewksbury and Gilmore, that Charles Dickinson of Chicago is a party in interest to the defence of this suit. Copies of the patents referred to are submitted herewith, being marked "Exhibit Amet Patent" Nos. 1, 2 and 3 respectively.

Richard N. Dyer.

Subscribed and sworn to before me :
:
this 25th day of June, 1896. :

Eugene Conran,
Notary Public,
Kings & N.Y. Counties.

(Seal)

UNITED STATES CIRCUIT COURT,

For the Northern Division

Of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY	
-vs.-	In Equity,
EDWARD H. AMET.	No. 23,986.

State of New York)
: ss:
County of New York)

WILLIAM E. GILMORE, being duly sworn, deposes and says as follows:

I am 33 years of age, reside at Orange, N. J., and am general manager of the Edison Phonograph Works, whose factory is located at West Orange, N. J. I have been general manager of the Company since the spring of 1894. That Company is engaged in the manufacture of recording and reproducing phonographs, and also the manufacture of the Edison soap blanks or cylinders for receiving sound records upon the phonograph.

I am well acquainted with the conditions existing at the present time and which have existed since the spring of 1894 in the talking machine business. A considerable demand exists in the trade for musical and other exhibition sound records for use on phonographs and graphophones which are in the hands of the public. These sound records are placed upon the Edison soap cylinders or blanks, and also upom similar cylinders manufactured by the complainant, the American Graphophone Company, the business of manufacturing these sound records being carried on by several concerns, including the United States Phonograph Company of Newark, N.J., the Columbia Phonograph Co. of Washington, D.C., the New England Phonograph Co. of Boston, Mass., and several others. The Columbia Pho-

nograph Co. referred to acts as the business agent of the complainant. The sound records so made are sold in the open market without restriction as to their use, and they are intended and adapted to be used, not only upon graphophones, but also upon phonographs, which are asserted by the complainant to infringe its patents, including the patents in this suit. The complainant has brought suit on these same patents against the Edison Phonograph Works, the United States Phonograph Company, and various other dealers in and users of phonographs, and in those suits the complainant contends that many, if not all, of the phonographs at present in the hands of the public are infringements of the patents in this suit. The sound records referred to, manufactured both by the complainant's agent and by the various other concerns, are advertised by catologue and otherwise, and are sold as a general article of trade without reference to the particular machines upon which they are to be used, and intending of course that they shall be used upon any talking machines in the hands of the public, including those which the complainant asserts are infringements of its patents.

I had my attention called two months or more ago to the decision of the Court in this case. About that time Mr. Charles Dickinson of Chicago, Ill., called upon me. Mr. Dickinson told me that he was interested in the Amet phonograph, and he showed me a sample of the glass arm which forms the reproducing element of the machine. Mr. Dickinson is understood in the trade to be the owner of the business of the Chicago Talking Machine Company, and this fact he has himself told me. The Chicago Talking Machine Company deals largely in the apparatus of the complainant and is understood in the trade to be the Western agent for the complainant.

William E. Gilmore.

Subscribed and sworn to before me:
this 24th day of June, 1896.
Eugene Conran, Notary Public,
Kings & N.Y. Counties.

(Seal)

UNITED STATES CIRCUIT COURT,

For the Northern Division

Of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY,	
-vs.-	In Equity,
EDWARD H. AMET.	No. 23, 986.

State of New York)
: ss:
County of New York)

GEORGE E. TEWKSBURY, being duly sworn, deposes and says as follows:

I am 38 years of age, reside at Newark, N. J., and am the secretary and treasurer of the United States Phonograph Company, whose place of business is located at Newark, N. J. That company is a corporation, organized under the laws of the State of New Jersey. The principal business of this company consists in providing the blank record cylinders of talking machines with musical and other records for exhibition purposes, and supplying such records to sellers and users of phonographs and graphophones. It has a larger business of this character than any other concern. I have been in the phonograph business since its commercial inception in the year 1888, and have been the largest manufacturer and purchaser of sound records from that time to the present. My connection with the United States Phonograph Company began in January 1894, my individual business referred to having been at that time transferred to that company. The business of making and selling such records is carried on at the present time by several concerns, including the Columbia Phonograph Company of Washington, D. C., through which latter company the com-

plainant, the American Graphophone Company, does its business. Such records are made entirely upon the soap cylinders manufactured by the Edison Phonograph Works, and upon similar cylinders manufactured by the complainant. These records are not made by anybody, so far as I know, on blanks having a recording surface of bees'-wax and paraffine, such as are described in the complainant's patents in suit, nor ever have been commercially made upon such blanks at any time in the history of the art. The demand for these musical records arose from users of the Edison Phonograph manufactured by the Edison Phonograph Works, which in its present form was put upon the market late in the year 1889 or early in the year 1890. The graphophone manufactured by the complainant at that time was not a practical machine and disappeared from the market. It was also not adapted to receive these musical records, because it had no provision for holding blanks of the character of the Edison blanks, and the feed movement of the graphophone was different from the phonograph. In the spring of the year 1893, the complainant put a new graphophone upon the market, having a proper mandrel for carrying the Edison blanks and using the same rate of feed of the recorder and reproducer over the surface, viz. one hundred threads to the inch. It then began to use Edison soap blanks on this machine, and later on began to manufacture these soap blanks itself. The graphophones which have been put out since that time have been adapted to receive these musical sound records, and the sales of these graphophones have enlarged the market for such records. The complainant, either directly or through the Columbia Phonograph Company, then began to compete with other manufacturers of sound records in the sales of such sound records on the general market. Such sound records have never been sold, either by the complainant or by any other manufacturer, with any restriction as to their use, so far as

I have ever known or heard. The business is a general one, the records being advertised, by catologue and otherwise, for sale to all persons who desire to buy them, and such sales are made without enquiry as to the use intended to be made of the records, and without restrictions of any character as to such use.

I have heard of the decision in the suit of the American Graphophone Company against Edward H. Amet. A report of this decision was shown to me by Mr. Charles Dickinson of Chicago, Ill., at my office in Newark. This was about two months ago, when Mr. Dickinson was on a visit to the East. At that time, Mr. Dickinson also showed me the glass reproducing arm which formed a part of the Amet machine, and further told me that he was interested in the Amet enterprise. Mr. Dickinson is a well known figure in the talking machine business, having been interested at an early day in the Chicago Central Phonograph Company, which was one of the local licensees of the North American Phonograph Company, and having subsequently bought stock, as he has often told me, in the North American Phonograph Company, the complainant the American Graphophone Company, and the complainant's business agent the Columbia Phonograph Company. Mr. Dickinson is also the capitalist who promoted the Chicago Talking Machine Company, and is the largest owner in the business of that Company, as I am informed by him. That company is understood in the trade to be the Western selling agent for the complainant, the American Graphophone Company. Mr. Dickinson has also informed me that he furnished the capital to the complainant which enabled the complainant to put on the market its present style of cheap machine. From these statements which Mr. Dickinson has made directly to me, and from my knowledge of the business, I am able to say that Mr. Dickinson is not only interested in the business of the complainant, but that his relations with the

officers of the complainant company are exceedingly close. Mr. Douglass, who has charge of the business of the Chicago Talking Machine Company for Mr. Dickinson and to whom Mr. Dickinson defers in all matters relating to the talking machine business (so Mr. Dickinson himself has informed me) was formerly an employee of the complainant at Washington, D.C., or its selling agent, the Columbia Phonograph Company, and was closely identified with the manager of the complainant's business. I am informed that Mr. Douglas gave an affidavit for the complainant in the Amet suit. Mr. Dickinson is reputed to be a man of large wealth, and is undoubtedly amply able to pay the expenses of a patent litigation. The Chicago Talking Machine Company and Mr. Douglas were the promotors, and are to-day the only selling agents, of the Amet spring motor for the phonograph, a device which originated with Mr. Edward H. Amet, the defendant in the Amet suit.

George E. Tewksbury.

Subscribed and sworn to before me :
:
this 23rd day of June, 1896. :

Eugene Conran,

(Seal) Notary Public,

Kings & N.Y. Counties.

UNITED STATES CIRCUIT COURT,

For the Northern Division

Of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY, -vs.- EDWARD H. AMET.	In Equity, No. 23, 986.

MEMORANDUM IN SUPPORT OF MOTION TO SET ASIDE DECREE, ETC.

I

THE CASE WAS TRIED UPON AN INCOMPLETE RECORD AND SHOULD NOT HAVE BEEN PRESSED TO FINAL HEARING UNDER THE CIRCUMSTANCES.

It appears by Dyer's affidavit that a number of suits have been brought by the complainant on its patents, in all of which the defence has been undertaken by Mr. Dyer's client, Mr. Edison, and that by a tacit agreement between counsel, no suits have been prepared for hearing on the merits except the two New Jersey cases, the other cases being suspended to await the decision in the New Jersey cases. Mr. Dyer would have undertaken the defence in the Amet case in the same way, but neither the complainant nor the defendant communicated with him. The talking machine trade understood the litigation situation, and two suits were actually brought in Chicago prior to the suit against Amet. Amet's defence was an incomplete one, being based on affidavits with the right of rebuttal by the complainant. This method of making up a record is not only unusual, but can never produce satisfactory results. Amet's excuse for not making a defence in the regular way is given by his solicitors as lack of means, but it appears by the affidavits of Tewksbury and Gilmore that Amet was backed by a Chicago capitalist of large means, amply able to make a proper defence. The

talking machines manufactured by it or licensed by it. In other words, the theory of the opinion is, that whether or not such records are sold with an expressed restriction as to their use, the situation implies such a restriction, and the use of one of these records on an infringing talking machine is a use not intended by the complainant in making sales of these records. This is a false situation created by the general statements of complainant's affidavits. The fact is, as shown by the affidavits of Tewksbury and Gilmore, that the complainant and a number of other manufacturers compete in the general market for the sale of these sound records, that they are advertised as general articles of trade, and are sold, not only without restriction or even enquiry as to their use, but also with the knowledge that they may be used on phonographs, which the complainant claims are a violation of its patents. The demand for these records comes in part at least from users who have phonographs, which the complainant asserts infringe its patents, and by making the sound record a general article of trade to be purchased indiscriminately by users of infringing and non-infringing machines, the complainant cannot claim the benefit of any express or implied restriction in the use of the records such as the Court evidently believed was the case, as shown by the opinion.

III.

THE "GROOVED TABLET OR OTHER BODY HAVING A SOUND RECORD FORMED THEREIN" OF CLAIM 22, AND THE "SOUND RECORD FORMED IN A WAX OR WAXLIKE MATERIAL" OF CLAIM 24, THE ALLEGED NOVEL ELEMENTS OF THESE CLAIMS, WERE NOT NEW WITH BELL AND TAINTER.

Such sound records are covered specifically, and independent of their combination with the phonograph, in claims 7,

patents on Amet's phonograph just issued and referred to in Dyer's second affidavit, show that this capitalist is jointly interested with Amet. It also appears that this capitalist is closely identified with the complainant and interested in its business, and is the owner of the complainant's Western selling agent, the Chicago Talking Machine Company. The Chicago Talking Machine Company is also the promotor and exclusive selling agent of another of Amet's inventions relating to talking machines. All this is, to say the least, suspicious. To avoid the effect of this suspicion the complainant should either have not pressed to final hearing, or should have given Mr. Edison an opportunity to come in and defend. We have not at hand proof of a collusive action, but it certainly looks suspicious and as if even though no collusion existed at the inception of the suit, the relations of the two parties in interest prevented a complete trial. And this situation is quite as serious as if actual collusion existed, because it results in the formal decree of the Court when the parties know that the facts are not before the Court to warrant the making of that decree intelligently. In other words, the Court is misled.

II.

THE SOUND RECORDS FORMING THE ASSUMED NOVEL ELEMENTS OF THE TWO CLAIMS SUSTAINED BY THE COURT, ARE ARTICLES SOLD WITHOUT RESTRICTION IN THE OPEN MARKET AND INTENDED FOR USE ON INFRINGING AS WELL AS NON-INFRINGING MACHINES.

The theory of the Court's decision is that the complainant makes and distributes sound records for use on the

8, 10, 12, 17, 18 and 45 of the Bell and Tainter patent. These claims, it will be observed, are directly in issue in the suit against the United States Phonograph Company (See stipulation, p. 53, record of New Jersey cases). A sound record marked "Complainant's Exhibit Defendant's Sound Record" was introduced into that case and infringement of these claims on the sound record was asserted. The novelty and patentability of this sound record which forms the assumed novel element of claims 22 and 24, are therefore at issue in the New Jersey cases, as well as the question as to whether such sound records as those which are at present on the market are the equivalent of the sound record described in the Bell and Tainter patent. The record in the New Jersey cases shows a number of instances of similar sound records in the prior art (see deposition of Edison, p. 161 et seq; Dr. Morton, p. 213 et seq; Batchelor, p. 305 et seq; Edison, p. 642 et seq; Morton, p. 671 et seq.).

IV.

BELL AND TAINTER ARE NOT ENTITLED TO THE CREDIT OF HAVING PRODUCED A SUCCESSFUL TALKING MACHINE, AND THE RECORD-CYLINDERS AND RECORDS NOW UPON THE MARKET ARE THE RESULT OF A SUCCESSFUL INVENTION MADE BY EDISON, AND ARE NOT THE PRACTICAL, SCIENTIFIC OR PATENTABLE EQUIVALENT OF THE RECORDS OF THE BELL AND TAINTER PATENTS.

This proposition is supported by numerous facts set out in the record in the New Jersey cases. It appears that that complainant's graphophone and Mr. Edison's phonograph were put upon the market by the North American Phonograph Company in the year 1888. Both machines proved a failure. Mr. Edison, however, continued work upon the phonograph, and as the result of a prolonged course of investigation and experiment, and the

making of a brilliant discovery as to the causes of the failure, he produced a successful machine. Subsequently and notwithstanding Mr. Edison's patents and the contracts prohibiting such course, the complainant returned to the market with a new machine, which was an imitation of Mr. Edison's machine, utilizing the discovery he had made and the means for making that discovery available. The soap cylinder, which has since been universally used and is the record-cylinder on the market, was one of the principal results of Mr. Edison's special work. That also is used by the complainant. We contend that that cylinder and the record placed upon it by the special appliances which Mr. Edison invented and which produced a successful machine, are not the equivalent in any sense of the bees'-wax and paraffine record of the Bell and Tainter patent (see following points in New Jersey record: Edison, Qs 69 to 76, pp. 176 to 179; Norton, Qs. 15 to 17, pp. 226 to 228; Batchelor, Qs. 150 and 151, p. 613, Qs. 155 to 159, pp. 614 and 615; Edison, Qs. 96 to 135, pp. 652 to 675; Norton, Qs. 58 to 63, pp. 689 to 690).

UNITED STATES CIRCUIT COURT,
For the Northern Division
Of the Northern District of Illinois.

AMERICAN GRAPHOPHONE COMPANY,	
-vs.-	In Equity,
EDWARD H. AMET.	No.23,986.

TO THE HONORABLE THE JUDGES OF THE UNITED STATES CIRCUIT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS:

Comes now the defendant, Edward H. Amet, and moves the Court that the Decree heretofore entered in this cause be set aside and that a rehearing of the cause be granted for the reasons hereinafter set forth.

1. The defendant has since the entry of the decree herein discovered evidence material to the cause, and which if it had been presented in Court, would have prevented the entry of said decree, and which evidence he did not know about until after said decree was entered, and until a few days ago. The fact is, the complainant and its agents with its authority have sold the sound records like those bought by defendant on the open market for use on Edison's phonographs and other machines which the complainant contends are infringements of its patents and which it has sued as infringements and has specially constructed its sound records to fit the arbors of said alleged infringing machines, and has cut the sound record grooves one hundred to the inch to specially adapt such sound records for use upon such alleged infringing machines and machines other than those of his own manufacture. Whereby it licensed any purchaser of such a sound record to use the same upon any machine. So that the sound records forming the assumed novel elements of the two claims of complainant's patents sustained by the Court, are articles sold

without restriction in the open market by the complainant and intended for use on infringing as well as non-infringing machines, on machines made by others as well as on machines made by the complainant, And when thus sold the complainant well knew that they would be used, and were being used constantly on other machines than those of its own manufacture. This material fact your petitioner learns and believes can be established by the testimony of William E. Gilmore of Orange, New Jersey, and George E. Tewksbury, of Newark, New Jersey, and of others.

The theory of the Court's decision is that the complainant makes and distributes sound records for use on the talking machines manufactured by it or licensed by it. In other words, the theory of the opinion is, that whether or not such records are sold with an expressed restriction as to their use, the situation implies such a restriction, and the use of one of these records as an infringing talking machine is a use not intended by the complainant in making sales of these records. This is a false situation created by the general statements of complainant's affidavits. The fact is that the complainant and a number of other manufacturers compete in the general market for the sale of these sound records, and that they are advertised as general articles of trade, and are sold, not only without restriction or even enquiry as to their use, but also with the knowledge that they may be used on phonographs, which the complainant claims are a violation of its patents. The demand for these records comes in part at least from users who have phonographs, which the complainant asserts infringe its patents, and by making the sound records a general article of trade to be purchased indiscriminately by users of infringing and non-infringing machines, the complainant cannot claim the benefit of any express or implied restriction in the use of the records such as the Court evidently believed was the case, as shown by the opinion.

2. The Court's decision was largely, if not entirely based upon the supposed fact that the "grooved tablet or other body having a sound record formed therein" of claim 22, and the "sound record formed in a wax or waxlike material", of claim 24, the alleged novel elements of these claims, were new with Bell and Tainter. Such however is not the fact, as your petitioner can now establish, as he is informed and believes by the testimony of Thomas A. Edison, Dr. Henry Morton, Charles Batchelor, and others. And this fact is shown by the depositions of these persons in the printed record of a suit pending in the United States Circuit Court for the District of New Jersey by this complainant, against the United States Phonograph Company, and others.

3. Bell and Tainter are not entitled as the Court was led to believe by the complainant's affidavits, to the credit of having first produced a successful talking machine. The Machine made with the sound record as described in the Bell and Tainter patent, i. e., formed with bees'-wax and paraffine, or waxlike material, proved to be a complete failure. And it was not until Edison invented the soap sound record which is what defendant herein used, that the talking machine became a commercial success, and a practical useful device. These facts your petitioner learns from the printed record above mentioned, and they can be established as your petitioner is now informed, and believes, by the testimony of the said Edison, Morton, and the Batchelor above named.

4. The reason why your petitioner offered and was willing to go to final hearing in this cause upon the affidavits used on the motion for preliminary injunction was because the Court expressed its intention to enter an order to speed this cause, limiting the time for making the record to sixty days, though the bill had only been a few days filed, and an

answer hurridly prepared at that time by copying in large part an answer on file in another case, without sufficient time to investigate; and your petitioner did not have at that time sufficient ready money to warrant him in employing counsel or to enable him so to do, and to pay the expense of taking the evidence by deposition in the regular and usual way. And your petitioner calls the attention of the Court to the fact that the complainant abused the privilege of filing rebuttal affidavits by putting in a number of additional affidavits, magnifying the alleged invention of Bell and Tainter, and stating alleged facts, which your petitioner had no opportunity to answer, and which may have tended to confirm the Court in the erroneous supposition that Bell and Tainter were the first to make the talking machines commercial success and were entitled to be considered as meritorious inventors.

5. Until after the decision was rendered in this cause your petitioner had no reason to suppose that the Edison interests were antagonistic to the complainant or that he could procure any information as to any existing defenses to the complainant's patents from the Edison interests, or any assistance of any kind from them. The complainant's affidavits misled your petitioner into supposing that there was some community of interest between the complainant and the Edison people by the statement therein to the effect "that the manufacture of the machines known as phonographs (the Edison machines) was begun under a license to use for an agreed royalty certain broad features of the patents in suit" and "that the essential features and principles of defendant's reproducing apparatus are inventions covered by special claims of the patents in suit which inventions have been in all graphophones from the first and which have been recognized by Mr. Edison and every one else." Whereas the fact is as your petitioner has since found, that Mr. Edison and his concern do not recognize the

complainant's patent, but on the contrary are contesting the same in good faith as to their validity in the suit above referred to wherein the testimony is now printed to the extent of 770 printed pages, and which suit will soon be ready for final hearing.

Wherefore in view of all the premises your petitioner humbly prays that the decree herein be set aside and a rehearing granted and permission be given to the defendant to take further proofs, and your petitioner will ever pray.

(Signed) Edward H. Amet.

State of Illinois:
:ss:
County of Cook :

EDWARD H. AMET, the above named defendant and petitioner being duly sworn deposes and says that he has read the foregoing petition and that the same is true of his own knowledge, except as to matters stated upon information and belief, and as to those matters, he believes it to be true.

(Signed) Edward H. Amet.

Subscribed and sworn to before me :
:
this 29th day of June, A.D., 1896.:

(Signed) W. W. Munday,
Notary Public.

We hereby certify that the matters in the foregoing petition mentioned and referred to are proper to be reheard before your honor, if your honor shall think fit.

(Signed) Munday, Evarts & Adcock,
Solicitors for Def't.

(Signed)
John W. Munday,
of Counsel.

O R D E R.

IN THE CIRCUIT COURT OF THE UNITED STATES

FOR THE NORTHERN DISTRICT OF ILLINOIS,

NORTHERN DIVISION.

Tuesday June 30, 1896.

Present: Honorable John W. Showalter, Circuit Judge.

American Graphophone Company)
:
vs.) IN CHANCERY
: 23,986.
Edward H. Amet.)

Now comes the defendant by his solicitor, and by leave of the Court files his petition to suspend the decree herein and for a new trial, and the Court not being fully advised upon said motion, continues the same for the term.

NORTHERN DISTRICT OF ILLINOIS,)
Northern Division.) ss:

I, S. W. BURNHAM, Clerk of the Circuit Court of the United States, for said Northern District of Illinois, do hereby certify the above and foregoing to be a true and correct copy of the Order Entered of Record in said Court on the Thirtieth day of June A. D. 1896, in the cause wherein American Graphophone Company is the Complainant and Edward H. Amet is the Defendant, as the same appears from the original Record thereof now remaining in my custody and control.

In testimony whereof, I have hereto set my hand and affixed the seal of said Court, at my office in Chicago, in said district, this Eighth day of July, A. D., 1896.

S. W. Burnham, Clerk.

AMERICAN GRAPHOPHONE COMPANY)
)
vs.)
)
AMET.)

GROSSCUP, J.---Motion is for leave to file a peition for rehearing.

On the hearing of this case it was not seriously disputed that the Edison inventions did not include the record of Bell & Taintor. My opinion was predicated upon the assumption that Bell & Taintor's record was their own invention.

It is now urged that this assumption will be disputed in the case pending before Judge Green between the American Graphophone Company and Edison. I shall allow the motion in this case for leave to file petition for rehearing, but will not pass upon the petition until I have heard from Judge Green in whose Court the case is pending.

P. S. Grosscup

IN THE CIRCUIT COURT OF THE UNITED STATES,
NORTHERN DISTRICT OF ILLINOIS,
NORTHERN DIVISION.

American Graphophone Co.,)
)
vs)
)
Edward H. Amet.)

Gen. No. 23986.
Term No. 719.
In Chancery.

N O T I C E.

Messrs. Munday, Evarts & Adcock,

Solicitors for Defendant,

Dear Sirs:--

You are hereby notified that at the opening of the court at the usual hour in the forenoon on Monday next, January 4th, 1897, or as soon thereafter as counsel may be heard, we shall appear before his honor Judge Grosscup, in the room usually occupied by him and move to dismiss the defendant's petition for re-hearing in the above entitled cause in view of the fact that a final decree in favor of the complainant has been entered in the cause pending in the United States Circuit Court for the District of New Jersey in the cause entitled American Graphophone Co. vs Edison Phonograph Works, copy of which decree we have previously served upon you, the pendency of said cause in New Jersey being the grounds stated by Judge Grosscup in his opinion granting you leave to file your said petition for re-hearing on June 30th, 1896.

You are further notified that in the event of this motion being granted and said petition being dismissed, we shall

ask the court to enter a final decree in this cause, copy of which is hereto attached, and that in the event of the court denying the motion to dismiss, we shall ask the court to set the petition down for hearing on a day certain.

Chicago, December 29th, 1896.

Poole & Brown
Complainants' Solicitor.

Service of the above notice and motion acknowledged this 30th day of December, 1896.

Munday Evarts & Adcock
Defendants' Solicitors.

IN THE CIRCUIT COURT OF THE UNITED STATES,
NORTHERN DISTRICT OF ILLINOIS,
NORTHERN DIVISION.

American Graphophone Co.,	)	Gen. No. 23,986.
	)	Term No. 719.
vs	)	In Chancery.
	)	
Edward H. Amet.	)	

M O T I O N.

And now comes the complainant by Poole & Brown its solicitors and moves to dismiss the petition for re-hearing of the above entitled cause filed by the defendant herein, for want of prosecution; and also move for the entry of a final decree herein.

Chicago, December 29th, 1896.

Poole & Brown

Complainants' Solicitors.

IN THE CIRCUIT COURT OF THE UNITED STATES,
NORTHERN DISTRICT OF ILLINOIS,
NORTHERN DIVISION.

American Graphophone Co.,)
)
vs)
)
Edward H. Amet.)

Gen. No. 23,986.
Term No. 719.
In Chancery.

F I N A L D E C R E E.

This cause coming on to be heard on the 4th day of January, A. D. 1897, upon complainants motion to dismiss petition for re-hearing filed on behalf of the defendant and for a final decree in the cause, and was argued by counsel both for complainant and for the defendant, and the court being fully advised in the premises, it is hereby

Ordered, Adjudged and Decreed as follows:

I. That the complainants' motion be granted and the defendants' petition for re-hearing, filed June 30th, 1896 be and the same is hereby set aside and dismissed.

II. That the interlocutory decree in favor of the complainant in this cause entered herein on the 4th day of May, 1896, be and the same is hereby confirmed and the injunction therein granted is hereby made perpetual.

III. The reference to a Master in Chancery to take, state and report the amount of damages the complainant has sustained and the amount of profits and savings realized by the defendant by reason of the inffingement complained of being in open court waived by complainants' solicitor and it

being agreed by the solicitors for the respective parties that the profits and damages to be recovered by the complainant of the defendant in said cause be assessed at the sum of one dollar, it is further

Ordered, Adjudged and Decreed that the complainant recover of the defendant the sum of one dollar as damages and profits by reason of said infringement as well as the costs in this court to be taxed and that judgement be entered for said sum and execution issue thereon, it is further

IV. Ordered , Adjudged and Decreed that a perpetual injunction issue against the defendant in accordance with the prayer of the bill.